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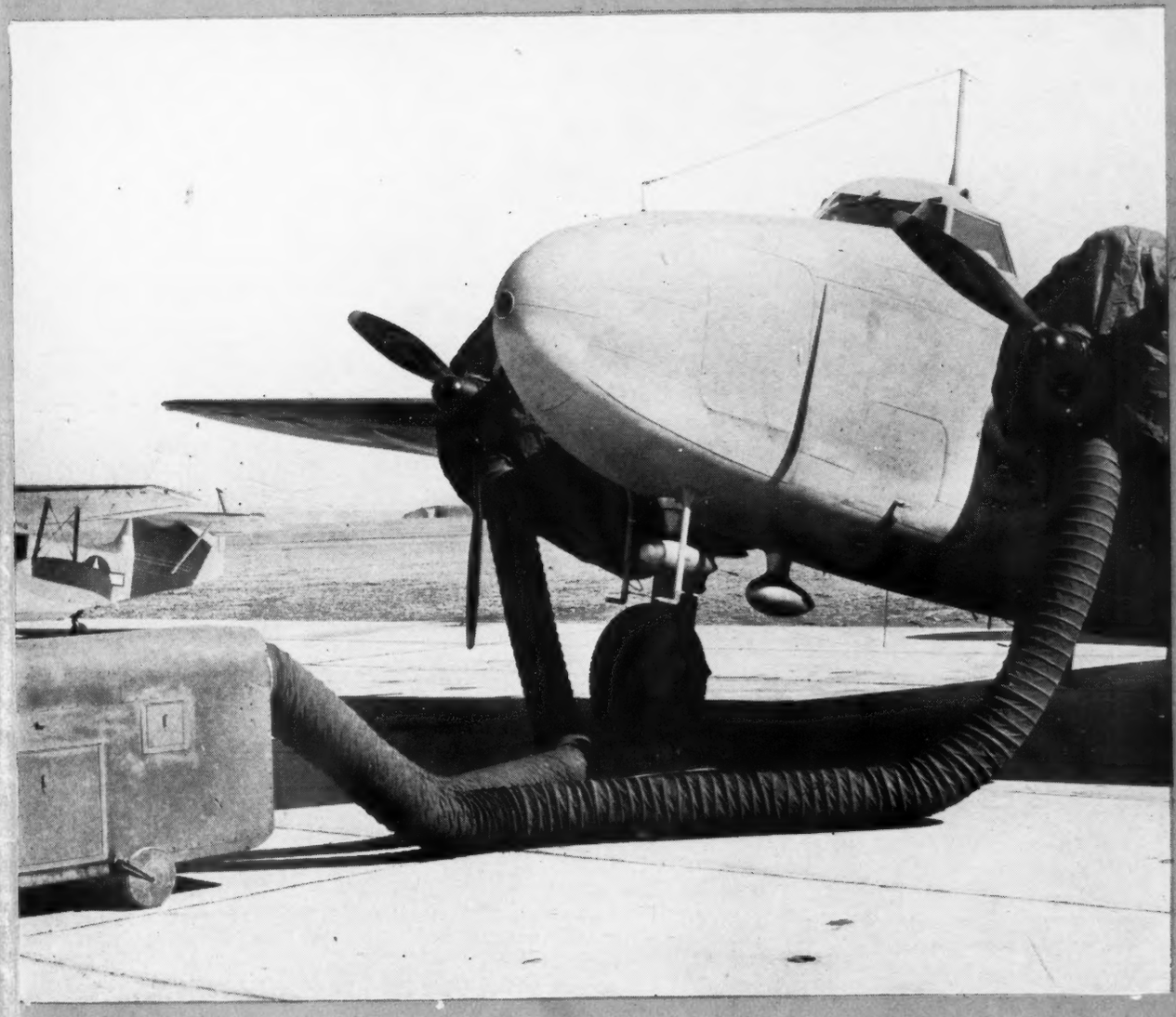
NOVEMBER, 1944

fuel oil & oil heat



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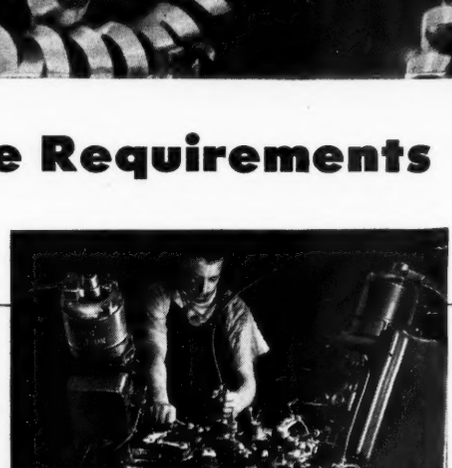
Meet Design and Performance Requirements in Machine Tools



The motor requirements for the precision machine tool, illustrated at the right, called for motors that met certain special mechanical requirements and performance characteristics not obtainable in a standard off-the-shelf motor.

Holtzer-Cabot motor development engineers solved the problem by designing a special fractional HP motor that exactly met all the operating and design conditions... and today these machine tools are operating at peak efficiency because of the dependability of the motors.

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Names in the News

John P. Rainbault, who recently resigned as manager of the Air Conditioning and Commercial Refrigeration Department of General Electric Co., announces the formation of the *John P. Rainbault Co.,* Manufacturers Representatives, with offices in the Phelan Building, San Francisco. His organization will represent several nationally known manufacturers on the West Coast.

John H. Read has been appointed advertising and sales promotion manager for the Williams Oil-O-Matic Heating Corp., Bloomington, Ill., according to W. A. Matheson, president. Prior to assuming his new duties Mr. Read was employed by the U. S. Treasury Department at St. Louis, Mo.

Julian Warren has been appointed manager of advertising and sales promotion of the Delco Appliance Division, General Motors Corp., Rochester, N. Y. He previously was associated with the Division in sales and executive work.

Howard P. Vermilya has been appointed Director of Housing Research of the John B. Pierce Foundation. He has for the past ten years been connected with the Federal Housing Administration as technical director. This experience will be valuable in directing the greatly expanded Housing Research Program of the Foundation.

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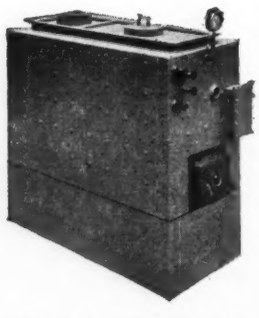

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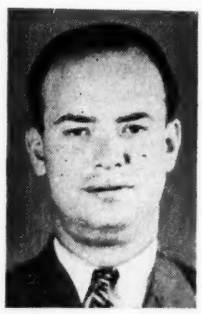
J. Howard Marshall, who returned to San Francisco September 1 as partner in the law firm of Pillsbury, Madison and Sutro, after more than three years as chief counsel and assistant deputy administrator of the Petroleum Administration for War, has now been elected president of the Ashland Oil and Refining Co., Ashland, Kentucky. *Paul G. Blazer* former president has been made chairman of the board.

C. N. O'Day, previously treasurer of Air Devices, Inc. has been appointed president to succeed *Jack Spalding, Jr.,* former president. *Gerald F. Mannion* has become the company's vice president, and *George J. Sweeney* is the new treasurer.



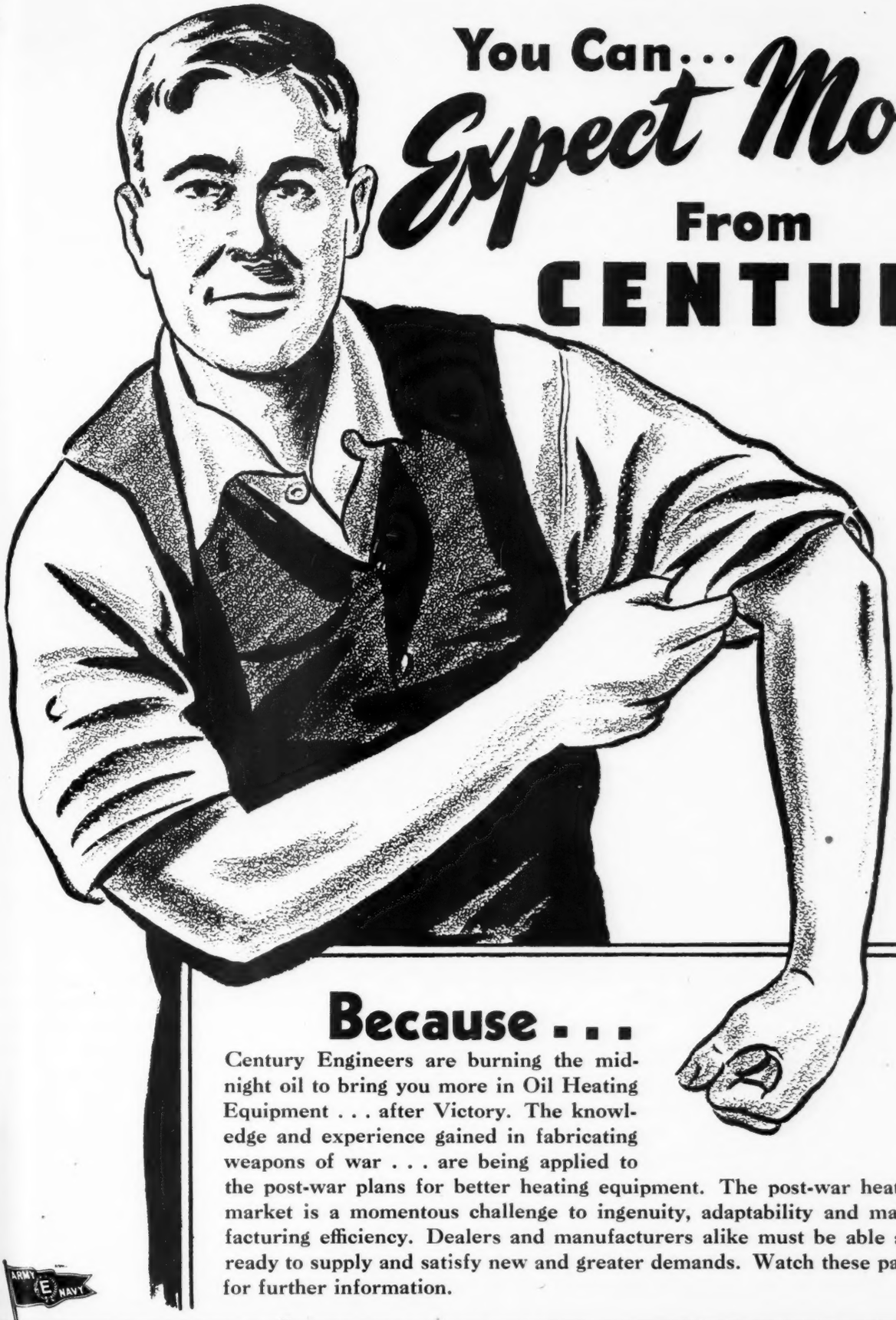
Robert Courtney will be in charge of the new General Controls Co. branch at 421 Southwest Boulevard, Kansas City, Mo. This new branch will provide facilities for serving customers in Kansas and in adjacent areas in Missouri, Nebraska and Iowa.

Frank Schryer has become plant superintendent of the L. J. Mueller Furnace Co. Mr. Schryer joins the Mueller organization with considerable experience in manufacturing plant management.

Jack Jones, formerly of Perfex Corp., has recently become connected with Penn Boiler and Burner Mfg. Corp., as special sales representative.

N. J. Kent has been named to direct the contact with oilburner manufacturers and dealers on the sales of Johns-Manville Insulating Refractory Brick for combustion chambers in addition to his previous responsibility on Refractory Products.

J. W. Baillie, secretary and treasurer of the Detroit Lubricator Co., has resigned. On December 1, *Mr. Baillie* will become acting president of the American Gas Machine Co., Albert Lea, Minn.



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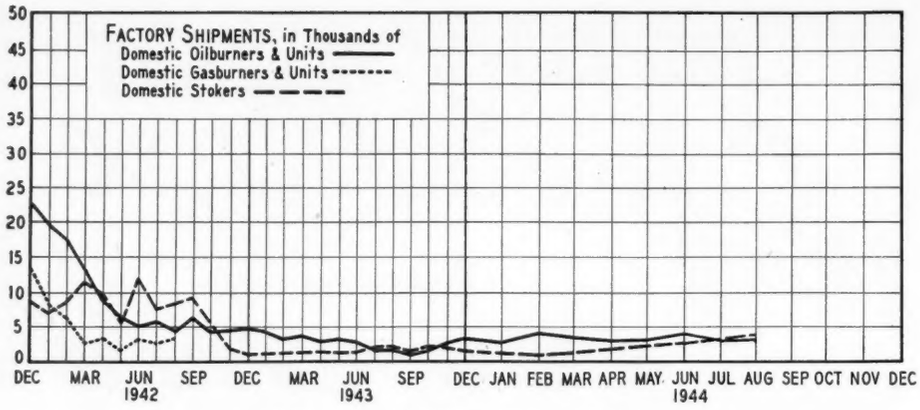
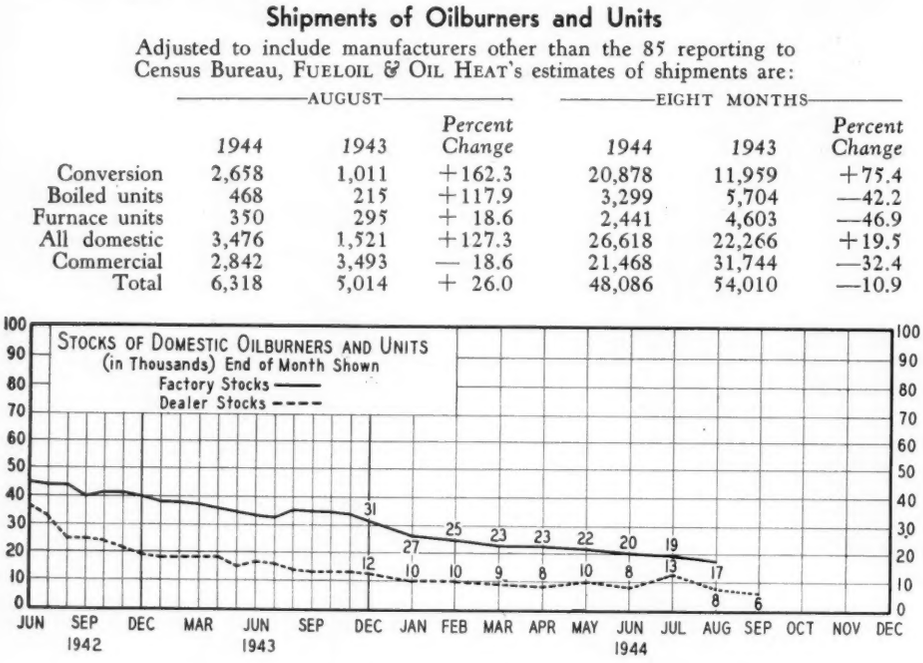


Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 85 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	AUGUST			EIGHT MONTHS		
	1944	1943	Percent Change	1944	1943	Percent Change
Conversion	2,658	1,011	+162.3	20,878	11,959	+75.4
Boiled units	468	215	+117.9	3,299	5,704	—42.2
Furnace units	350	295	+ 18.6	2,441	4,603	—46.9
All domestic	3,476	1,521	+127.3	26,618	22,266	+19.5
Commercial	2,842	3,493	— 18.6	21,468	31,744	—32.4
Total	6,318	5,014	+ 26.0	48,086	54,010	—10.9



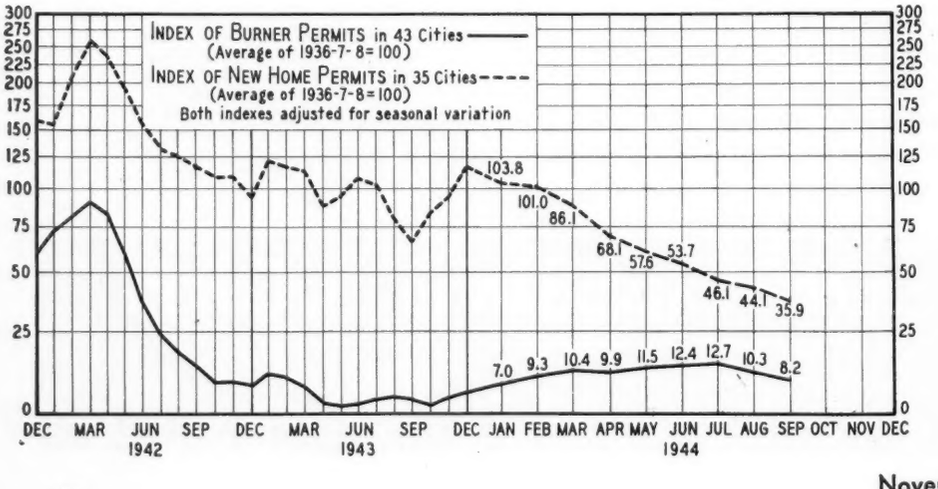
September Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	Top price*	Low price	Top price*	Low price	Top price*	Low price
Highest	$335	$179	$575	$375	$525	$395
Lowest	200	165	425	350	400	298
Sept. Aver.	262	179	488	368	460	360
August Aver.	262	179	456	360	472	376

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: Jan. 1940 is 100%

WHOLESALE				RETAIL			
September	114.2	Six months ago	108.0	September	113.0	Six months ago	110.1
August	114.0	Year ago	103.7	August	113.0	Year ago	111.0



Oilheating Trends

ESTIMATED INSTALLATIONS of domestic oilburners and units in September were 3,683, or more than seven times the 510 installed in the same month last year. The September estimate compares with 2,991 in August. Total domestic installations for nine months this year were 29,381 and for the same period last year 5,231. Of the 29,381 installed this year to September 30, an estimated 22,021 were replacements of old burners and the remaining 7,360 were for new oilheating users. September sales, by types of equipment, were conversion burners 77%, boiler-burner units 10%, furnace-burner units 13%.

RECONVERSIONS: Based on projections from the figures of reporting dealers, those who went back to oil after having converted to coal numbered 7,980 during the nine months of this year. Domestic reconversions in 1943 were 14,010, indicating a total of 21,990 who have come back to oil after patriotically converting to coal in the early shortage period. FUELOIL & OIL HEAT's estimates of domestic conversions to coal were 82,040 in 1942 and 17,965 in 1943, a total of 100,005. Subtracting from this the estimated reconversions to date of 21,990 leaves 78,015 who converted to coal and are still burning coal.

Dealers were asked what should be done first when more oil is available, permit reconversions or raise coupon values. 68% favored allowing reconversions first, 32% thought raising coupon values more important. There was little regional variation in these attitudes, except that the Pacific Northwest voted 100% for reconversions first.

BURNER PRICES: Conversion burner prices this month showed almost no change, either wholesale or retail, from August. Units showed mixed trends, with boiler-burners generally up and furnace-burners lower in the price tables.

BURNER STOCKS: Dealer stocks are really scraping bottom, with estimates for September 30 at a little below 6,000 total conversion burners and units on hand, a drop of 2,000 from the month previous. Factory stocks on August 31, the latest month for which figures are available, were 16,985 domestic burners and units,

compared with 19,190 at the start of that month. Shipments during August were 3,476, indicating new production of 1,271. More and more dealers are reporting no stocks and inability to get them from their normal suppliers. A good many possible replacement sales this fall are going to be missed. The 30,000 burners authorized for manufacture in the fourth quarter will not reach dealers much before the end of the year due to manufacturers' difficulty in getting motors .

SERVICE INCOME: September service department income of reporting dealers averaged $2,958, or virtually the same as their August income of $2,998, and 8.9% above September a year ago, when the same group averaged $2,716.

LEFT-OVER COUPONS: Now that dealers have gone through the mechanics of counting all of their leftover coupons from last season and notifying their customers of the gallonage, as required by rationing regulations, it is for the first time possible to know with reasonable certainty how much oil is involved, Nationally, 24% of domestic central heating customers had coupons left over, with an average of 116 gallons a customer. While this is a large amount in total gallons, it is yet not particularly serious to the supply program, for the left-over coupons will increase this season's total demand by only about 1.9%. By regions, the percentages and average gallonages were:

	Customers with left-over coupons	*Avg. gallons*
New England	24.3%	96
Middle Atlantic	25.5	113
Middle West	21.6	135
Pacific Northwest	25.0	110
U. S. Average	24.0	116

DEALERS' POSTWAR OUTLOOK: General impressions of postwar oilheating equipment sales in their individual communities, as reported by dealers this month, add up to a somewhat less optimistic picture than the forecasts in the October issue of FUELOIL & OIL HEAT. Carefully weighted for relative size of dealer and relative importance of geographic location, dealer thinking is that sales in five postwar years will average 37% above 1941. This compares with the magazine's forecast for the five years of an average rise of 49%. The dealers were first asked for a general impression of oilheating popularity in their markets postwar. 79% expect greater popularity, 7% expect decreased popularity, 14% expect no change. Reflecting this thinking in sales percentages showed considerable difference of opinion in various parts of the country. New England expects an average 64% increase, Middle Atlantic dealers see a 29% gain, the Midwest predicts a 27% rise and the Pacific Northwest believes sales will average 41% higher. The strong New England optimism indicates that dealers are not much afraid of gas, and stokers have never appealed much to the Yankees.

Comments from the dealers this month were largely on the postwar theme. Typical New England impressions: "To expect high level sales for five years is too long a period. We expect a tapering off after three years." . . . "Because more complete units will be sold, I've made a new tie-up with a large producer of units." . . . "Burner sales will flourish when fueloil prices return to near normal." . . . "The weakness in thinking in percentages is that the industry's rise may be more than the individual dealer's increase, and probably will for we expect a lot of new burner

(*Continued on page 84*)

Oilburner* and Building Permits

OILBURNERS *September* 1944	OILBURNERS *September* 1943	OILBURNERS 9 MONTHS 1944	OILBURNERS 9 MONTHS 1943		DWELLINGS *September* 1944	DWELLINGS *September* 1943	DWELLINGS 9 MONTHS 1944	DWELLINGS 9 MONTHS 1943
0	0	..	0	Albany, New York	..	..	..	..
..	..	..	..	Baltimore, Maryland	16	56	..	560
..	..	..	..	Binghamton, New York	0	0	1	0
..	..	..	..	Bloomfield, N. J.	0	0	..	0
..	..	..	..	Boston, Massachusetts	0	0	0	22
15	0	84	3	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	0	5	..	319
..	..	..	..	Des Moines, Iowa	0	0	..	10
12	0	..	0	Detroit, Michigan	154	403	..	3487
5	0	..	3	Elizabeth, N. J.	0	0	..	54
2	2	..	4	Freeport, New York	..	..	..	..
3	0	4	1	Irvington, N. J.	4	0	8	11
..	..	..	..	Lynn, Massachusetts	1	0	..	0
5	0	..	6	Milwaukee, Wisc.	56	40	..	205
28	13	..	62	Minneapolis, Minn.	39	0	42	2
1	0	19	3	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	0	0	0
10	2	73	17	Mt. Vernon, New York	..	..	..	..
22	2	..	17	Newark, New Jersey	..	..	..	..
4	3	93	27	New Bedford, Mass.	..	..	..	..
3	1	12	2	New Haven, Conn.	..	..	..	..
0	0	2	6	New Orleans, La.	..	..	..	..
2	0	..	0	New Rochelle, N. Y.	0	0	1	0
0	4	..	44	Manhattan, Bronx, Rchd	..	..	..	..
3	1	..	150	Norfolk, Virginia	0	2	5	182
0	1	1	5	Oakland, Calif.	..	..	..	..
27	6	..	24	Omaha, Nebraska	19	13	336	17
0	0	0	1	Orange, New Jersey	0	0	0	0
8	0	23	1	Paterson, N. J.	0	2	1	32
..	..	..	..	Plainfield, N. J.	0	9	7	18
1	1	15	4	Portland, Maine	0	27	1	49
19	13	130	46	Portland, Oregon	14	43	..	1389
5	0	..	1	Providence, R. I.	0	0	1	0
..	..	..	..	Reading, Penna.	0	0	0	0
0	0	0	1	Richmond, Virginia	1	0	192	33
0	2	0	7	Rochester, N. Y.	..	..	..	..
5	0	27	5	Rockville Center, N. Y.	0	0	0	0
1	0	5	0	Salem, Massachusetts	0	0	0	0
3	5	..	43	St. Louis, Missouri	0	0	0	39
9	0	56	7	St. Paul, Minnesota	25	1	26	4
1	0	13	18	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	73	110	474	119
..	..	..	..	Springfield, Mass.	2	17	13	263
2	0	..	0	Stamford, Conn.	..	..	..	..
..	..	..	..	Syracuse, New York	0	9	21	51
..	..	..	..	Trenton, New Jersey	1	0	8	103
..	..	..	..	Utica, New York	0	0	30	0
22	5	..	26	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	0	0	0	0
8	3	..	14	White Plains, N. Y.	0	0	0	0
1	0	13	3	Wilmington, Delaware	0	0	10	496
10	3	108	13	Worcester, Mass.	..	..	..	..
7	1	62	12	Yonkers, New York	..	..	..	..
244	68	740	182	*Totals*	405	737	1177	1441
+258.8		+306.5		*Percent Change*	—45.0		—11.3	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

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War Oilheating Applications

Oilburner Factories Help to Win This Petroleum War

by
Robert Gray

WITHIN A FEW MONTHS after general oilburner production was stopped in the spring of 1942, burner factories were humming with war production. On the average, their output has been more than double the prewar years, measured in dollars. Latest Government figures on the overall activities of oilburner factories are for the first quarter of 1944. Using 1939 as a typical peacetime year and calling it 100%, the wartime output of these plants runs:

1st quarter 1943	224.6%
2nd quarter 1943	236.2
3rd quarter 1943	254.1
4th quarter 1943	207.8
1st quarter 1944	195.3

The peak was reached in the summer a year ago, but the output levels are still high. In the January-March quarter of this year the total shipments of those factories classed as oilburner plants by the Census of Manufacturers, 1939, were $7,738,000, with more than 82% sold for military purposes.

About 30% of the product sold in that period was oil or gas burners and the remainder mostly munitions. Division of sales in the January-March quarter is shown in an accompanying table.

The figures in the table obviously do not include all of the war production by companies who had oilburner departments, but rather only those companies classed as oilburner manufacturers in the 1939 Census because oilburners represented more than half of their output.

The figures are interesting principally because they show that oilburning equipment has been sold by these companies for military purposes to the extent of seven or eight million dollars a year.

Much of this has been standard run-of-the-mill product, the same burners and units previously sold for peacetime uses. But there have been a few quite novel developments of oilheating for specific war uses, displaying considerable ingenuity.

Some half dozen of these have recently come to notice. They may point the way to peacetime uses—in fact some are already being sold for non-war applications.

The widest application of oilheating to special war uses, from the standpoint of number of units, has been the vaporizing type tent heater, officially called "Burner, Oil, Stove, Tent, M-1941." More than 400,000 of these have been produced and they are in use all over the world outside of torrid zones.

This development had an interesting history. In the earliest phase of tent heating for this war the planners went in rather heavily for circulating or space heaters, but they had not counted on the drafty floors and leaky tents which would be hurriedly erected. As a result it was often difficult to circulate the air, and attention was switched to some type of radiant heating.

The need was met with a round, squatty tent heater 17 inches in diameter and 17 inches high with a 12 inch grate area for burning solid fuel. This was a good stove, but when hard coal or coke were burned, the stove virtually ran away with the tent, because there was no control except a small damper in the pipe. Intense heat was developed and they required frequent stoking, not always possible under combat conditions. Soft coal was no better, because soot would clog up the chimney.

The men liked the squatty little heaters because they threw plenty of radiant heat down close to the floor where it was most needed. With several hundred thousand of these tent heaters on hand, the Quartermaster Department went looking for a better answer on fuels.

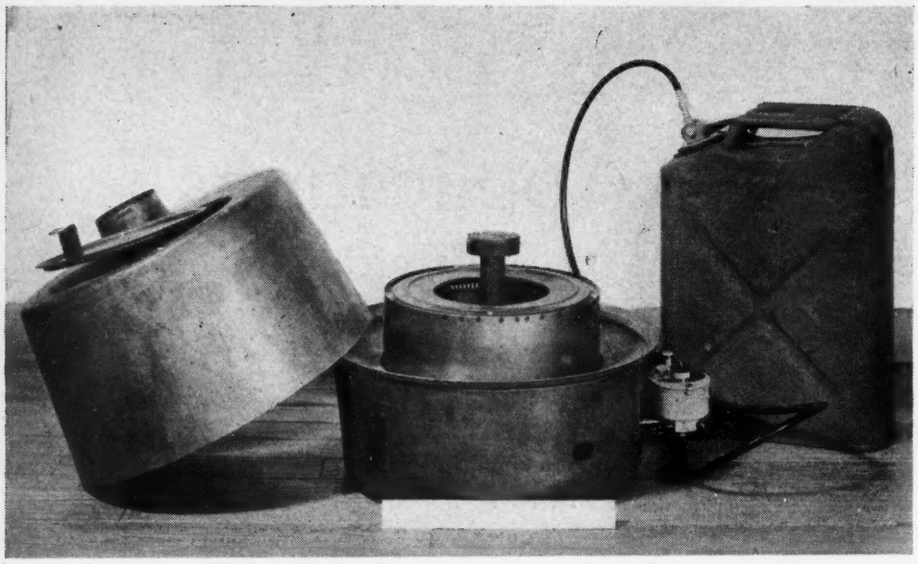
They were referred to Oil Devices, manufacturers of Breese burners, and for over 20 years engineers of pot-type burner applications. Since electric power would not be generally available a natural draft burner was a must.

The Company designed a special conversion burner for this unusual stove which was of proportions entirely out of line with conventional heating appliances. Civilian appliances are generally tall and have liberal combustion space, whereas this particular job had only 8" combustion space left after the burner was installed.

At first the Army asked for a burner that supplied 40,000 Btu's per hour, and it was found that the regular 10 inch Breese burner could be adapted for this. But, as a coal stove, the unit had been designed for 50,000 Btu capacity, so the Army soon decided that it should be possible to get that much from oil. Accepting the challenge, Oil Devices was able to design and produce a burner that delivered 67,000 Btu's within the 10 inch size.

Shipments of Oilburner Manufacturers, 1st Quarter, 1944

Product	*Dollar Shipments*	*Percent Military*	*Percent Civilian*
Oilburners and gasburners	$2,330,000	62.2	37.8
Armored vehicles and parts	851,000	100.0	0
Fire control equipment	832,000	100.0	0
Combat tanks and parts	823,000	100.0	0
Bombs, mines, torpedoes, depth charges	504,000	100.0	0
Ship equipment and parts	314,000	100.0	0
Heating boilers	297,000	99.7	.3
Aircraft accessories	291,000	100.0	0
Power driven pumps	254,000	54.7	45.3
Agricultural equipment	169,000	0	100.0
Valves and fittings	142,000	35.9	64.1
Ammunition, explosives equipment	139,000	100.0	0
Machine shop products	137,000	79.6	20.4
Total	$7,738,000	82.2	17.8

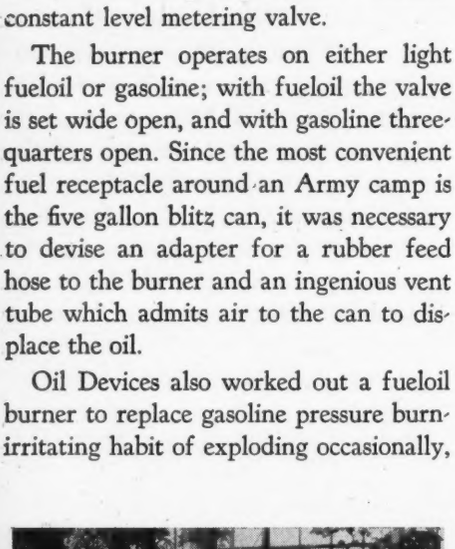


Oil Devices' *adaptation for tent heaters.*

The burner consumes a pint an hour on the pilot stage and .8 gallons an hour when wide open. Working with Oil Devices throughout the development of the burner was Detroit Lubricator Co., Detroit, which helped produce a suitable constant level metering valve.

The burner operates on either light fueloil or gasoline; with fueloil the valve is set wide open, and with gasoline three-quarters open. Since the most convenient fuel receptacle around an Army camp is the five gallon blitz can, it was necessary to devise an adapter for a rubber feed hose to the burner and an ingenious vent tube which admits air to the can to displace the oil.

Oil Devices also worked out a fueloil burner to replace gasoline pressure burn-irritating habit of exploding occasionally,

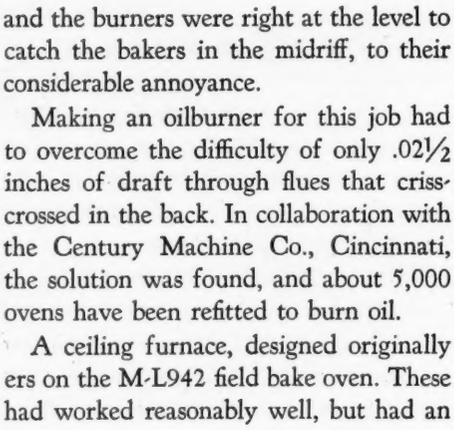


Oilfired *field bake oven.*

and the burners were right at the level to catch the bakers in the midriff, to their considerable annoyance.

Making an oilburner for this job had to overcome the difficulty of only .02½ inches of draft through flues that criss-crossed in the back. In collaboration with the Century Machine Co., Cincinnati, the solution was found, and about 5,000 ovens have been refitted to burn oil.

A ceiling furnace, designed originally ers on the M-L942 field bake oven. These had worked reasonably well, but had an



Complete *ceiling furnace.*

for heating large spaces in more-or-less temporary construction, is being made by the H. C. Little Burner Co., San Rafael, Calif. This is most widely used in aircraft plants, military storehouses and other huge rooms where floors must be kept clear. True, such spaces could be heated with the conventional boiler plant in a basement or boiler building, but often such a boiler would hardly be installed before the buildings would be enlarged and the heating plant inadequate.

The completely self-contained unit heater attached to the ceiling proved the best answer, and has been so effective that now numbers of them are being installed in permanent factories making civilian products. With their ease of installation or removal, they provide a heating flexibility hard to find in other types. For example, if a building is this year a warehouse requiring 45° and next year a workshop requiring 65°, simply hang up more units.

These ceiling units have vaporizing burners with electric ignition. Air circulation is with a Torrington fan on a half-horse motor, and temperature regulation is thermostatic.

Heater for Camp Shows

A completely self-contained portable heater for large tents was developed for the Army by L. J. Mueller Furnace Co., Milwaukee. Early in the war, when the Army was building extensive camps and cantonments all over the country, the morale builders for the GI Joes decided on portable theater units that could be easily moved from one camp to another.

The theaters and dressing rooms were regular canvas circus tents which required heating during cold seasons.

Mueller was given Army specifications on Btu requirements, etc., for an oilfired forced air unit, with an induced draft fan to exhaust flue gases, with the result that the portable unit shown in the accompanying photograph was devised. It has a steel I-beam skid and frame assembly, to which is bolted the furnace-burner, the blower and a 50-gallon oil tank, and to move it about a truck or tractor hooks on to the holes shown in the skids.

The photograph shows the camp show heater in various stages of assembly, with all parts housed within the jacket. The thermostat is inside the return air grille.

All that was required to operate the heater was making an electric connection with the camp's mobile generator set and a short length of smoke pipe extended horizontally from the radiator outlet to the side wall of the tent. The warm air discharge from the top is accomplished with a 90° cowl, not shown in the picture. This cowl has a directional flow

Mueller *camp-show heating plant in progressive stages of assembly.*

grille to discharge air at an eight foot level downward and to both sides. Btu output capacities were 150,000 or 225,000. The initial order was for 54 units, but since then many additional units have been shipped.

After three Army application stories, perhaps it's time to show that the Navy also keeps its boys warm. The Kresky Mfg. Co., Petaluma, Calif., has had a hand in this with its Combat Zone Military heater.

On the word of thousands of sailors in Alaska, the place has many attractions, but a mild, balmy climate doesn't head the list. But the Navy found the way to dispel the icy chill in living quarters, offices and other buildings at the naval bases in our northernmost territory with the specially designed Kresky oil heater.

Interestingly, Kresky is a real pioneer in oilheating. Away back when Teddy Roosevelt was President, the Company first sold an oilheater to keep young chicks warm. Petaluma, on the peninsula above the Golden Gate, is the largest poultry raising center in the Country, and the Company's sales for some years were confined to this application.

The oilheater wanted by the Navy had to be provided in large quantities, had to be particularly compact to save cargo space. And it had to be packed in such way as not to be damaged by water when being unloaded from ships. At some of the islands where the heater was to be used there was no dockage and it was necessary to dump the crated burner overboard in the surf, and let it float ashore.

The Kresky Combat Zone Heater, shown in an accompanying illustration, utilizes a vaporizing principle, but not the conventional pot type. The firepot is rectangular, ten inches long, three inches wide and three inches deep. Constant oil and air mixture is provided by induced draft from a motorized blower. The heating unit is built on a down-draft principle. Combustion gases pass out at the top of a rectangular chamber into an outer chamber, known as an economizer, move downward and pass to the flue at the bottom of this outer chamber.

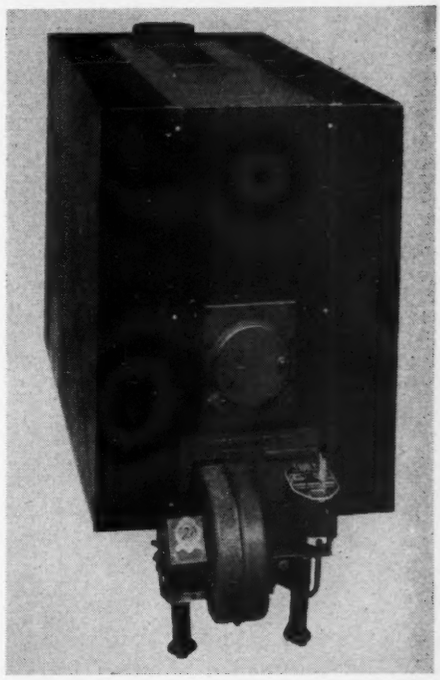
An outer casing provides circulation of the air in the room, and this is dismounted for shipping to conserve space.

Without stating the number of these heaters supplied to the Navy, it is significant that the Company has had to double its production space to handle this assignment.

In placing an Air Corps story last, no reflection on that service is involved. The expansion of aircraft operation in this war has brought a lot of business to oilburner factories, and these factories, in turn, have blessed the air men by devising better and better heaters to facilitate engine starting in cold weather.

Some of the requirements for these aircraft preheaters have caused the burner manufacturers and their engineers to dig for solutions in such way as they never had to do in peacetime. With size and weight held down for easy portability, the Btu output had to be several times that of a home heating plant.

A leader in aircraft preheater development and production has been Harvey-Whipple Inc., of Springfield, Mass. Accompanying photographs, in addition to the one on the front cover, shows types and applications of their equipment.



Kresky *Combat Zone Heater.*

T. A. Hodgdon, Harvey-Whipple's Director of Marketing, has explained some of the problems encountered in this work:

"Our experience in developing special heaters for the armed forces has been an exciting and stimulating venture right from the start. All of our heaters for Uncle Sam have been of the forced warm air variety with the exception of a quantity of especially designed conversion

Harvey-Whipple *aircraft engine warmers at an Arctic air station.*

burners for laundry purposes delivered early in the war.

"Our portable warm air heaters for preheating aircraft engines have ranged from 100,000 Btu up to 800,000 Btu. They are designed to warm up aircraft engines externally, making it possible to start even the largest engines in outside temperatures as low as 60° below zero. They are also used to melt ice off wings, free up aircraft wheels frozen in the ice or ground, warm up aircraft cabins, do a host of other heatings jobs wherever a self-contained portable heater is required.

"Heat delivery from the unit is by flexible, collapsible ducts. Before Pearl Harbor we had manufactured a line of oil fired warm air conditioners, hence it was with confidence that we tackled the problem of developing engine preheaters for the United States Air Forces.

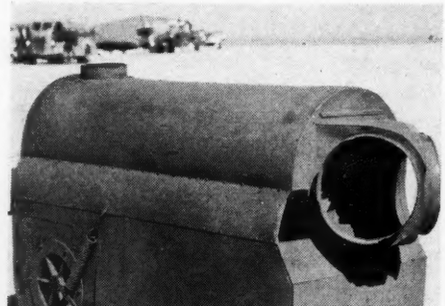
"We started right from scratch to design entirely new heat generating apparatus. Some idea of the magnitude of the job may be gathered by the following example:

"Prior to the war, it was not uncommon for an 80,000 Btu warm air conditioner to occupy a space in the cellar of as much as 60 cubic feet (2.5′ wide, 4.2′ high, 5.7′ long) with a weight of as high as 550 lbs. Yet the first job handed us by the United States Air Force required 300,000 Btu from a tiny unit weighing approximately 300 lbs., occupying only 29 cubic feet—and that space was to include the heat exchanger, the burner, an independent gasoline engine to run the pump, fan and ignition magneto, plus a fuel tank containing enough fuel for eight hours continuous operation! Over three times the heat output—from less than one-half the space!

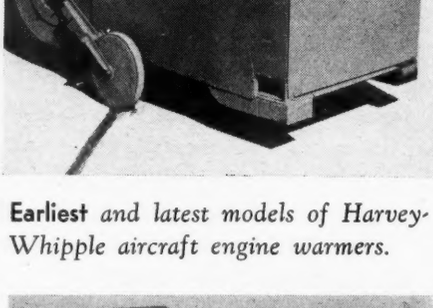
"This unit had to deliver a 250° temperature rise, push out 1700 C.F.M., must be easily portable, most operate satisfactorily in temperatures at as low as 60° below zero.

"In designing this heater we ran across many interesting side issues. For instance, we found that although the heat generating apparatus did function perfectly at 60° below, the small air-cooled gasoline engine (not of our manufacture) for supplying the motive power would sometimes give up the ghost simply because the tiny carburetor would freeze and the crank case oil turn "to grease."

"We remedied this by a specially designed duct to carry heat to both carburetor and crank case. We went a step further. We believe we were the first manufacturers of these aircraft engine preheaters to completely winterize the heater. We enclosed the entire unit in an insulated jacket, in one end of which is a heated engine compartment to futher insure continued engine operation in sub-zero temperatures. The excess heat from this compartment reaches the air intake for the burner, thus adds many Btu to the output.



Earliest *and latest models of Harvey-Whipple aircraft engine warmers.*



Service With Mittens On

"These heaters are used out-of-doors, of course, often in Alaska, Labrador, and Greenland climates. With 60° below zero in mind, we perfected the service angle of the heater so that a mechanic working out-of-doors could perform the major necessary service operations quickly, with heavy mittens still on his hands. Two large cowl-doors open and fold back, giving easy access to all working parts. The nozzle tube may be withdrawn from the firing head in less than two minutes and a nozzle changed, with no bare finger work required. The entire burner head can be withdrawn for electrode adjustment in two minutes by a man with mittens on.

"Should engine failure come about, the entire power unit may be disconnected and pulled from the unit in 30 seconds. A spare one may then be slipped into place ready for action in less than two additional minutes. One man can do this with his mittens on—without the use of a single tool. A patented quick-action multiple fuel line joint plus large wing nut engine-bed bolts make this possible.

Fueloils of the Future

The Effect of Cracking on Burning Characteristics

by
A. P. Frame

During the last two years there has been considerable speculation on the characteristics and burning qualities of the fueloils likely to be available in the post-war period. This article by Mr. Frame, vice-president and chief engineer of Cities Service Refining Company, now on leave to be director of refining for the Petroleum Administration for War, tells what may be expected in the ultimate future, and how these future fueloils will differ from those of the past. This is part of a paper Mr. Frame delivered before the fall meeting of the Oil Heat Institute of New England at Boston, October 18.

CRUDE oil is a very complex mixture of literally hundreds of hydrocarbons. It contains, as a rule, about 25% of straight run gasoline, usually of doubtful quality as far as its use in a modern automobile is concerned. This straight run gasoline is blended in the refinery with a cracked gasoline and then leaded to make a marketable product. In addition to straight run gasoline, crude oil contains, usually, about 10% of kerosene, which, after a chemical treatment to improve its stability and burning qualities, is available as a fuel for the most sensitive types of fuel burners. There is also present in the crude oil a fraction which the refiner usually refers to as middle distillate, which fraction will average approximately 50% of the crude oil. This middle distillate fraction is frequently divided into two portions, the first one being the home heating oils. The other portion of the middle distillate fraction is usually gas oil, which received its name because years ago this portion of the crude oil was generally used in the manufacture of artificial gas. The remainder of the crude oil comprises the lubricating oils, heavy oils and asphalts to serve obvious purposes.

A number of years ago it was discovered that if the gas oil, which was already going out of use for gas enrichment purposes, was subjected to high temperatures and high pressures, a decomposition of the gas oil would take place, forming as major products cracked gasoline, a cracked oil having the same viscosity and boiling range as home heating oil, and a residue product suitable for use as residual fuel oil. This thermal cracking process served two very necessary purposes; first, it permitted the refiner to utilize a product, gas oil, for which there was no ready market and, secondly, it produced a gasoline which was definitely superior in antiknock properties to the straight run gasoline and thus permitted blending to make a more satisfactory motor fuel. The thermally cracked distillate product was, in many cases, treated to improve its stability and then included as part of the entire home heating oil fraction.

This, then, was the condition existing in general throughout the industry prior to the war. The gasoline production had been improved in quality by virtue of the rather extensive cracking of a portion of the middle distillate fraction from the crude oil. The home heating oils were largely a straight run product, inasmuch as the amount of thermally cracked material was relatively small. Fueloil burners, in general, were designed to utilize the oils then available and everybody was reasonable happy.

The terrific military demands for 100 octane aviation gasoline forced the oil industry to increase very rapidly its production of high quality gasoline components. To meet this demand, it was essential that the amount of cracking be increased at an accelerated rate. Fortunately, the petroleum technologists had ready and waiting a new form of cracking equipment of which you have heard so much. This is the catalytic cracking process, which submits the middle distillate cut to conditions of high temperature in the presence of a catalyst.

Fundamentally, catalytic cracking does not differ from thermal cracking in that both processes yield, from a gas oil charge stock, gasoline and a distillate cut, as well as other by-products. However, the quality of the gasoline produced from the catalytic process is very much superior in antiknock properties to that produced by thermal cracking. A great many catalytic cracking units were installed in refineries during the early days of the war in order to supply the anticipated military requirements. But remember that these units

A. P. Frame

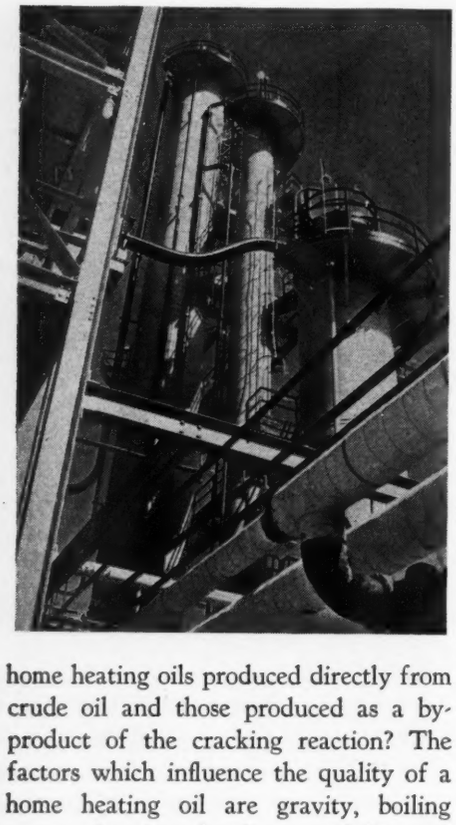
were in addition to the thermal cracking units which were, in general, still continued in operation. This increase in total cracking facilities created further competition in the demand for the middle distillate fraction from the crude oil.

True, more crude was being run in the refineries and true, also, the requirement for home heating oils was being artificially curtailed through rationing. But to supply feed stock for all the cracking equipment, thermal and catalytic, it was necessary to utilize an appreciable amount of what used to be the home heating oils.

To further complicate matters, another competitor was demanding a larger portion of the middle distillate fraction and that was the increasing demand for diesel

fuel by the Navy. A diesel engine requires a fuel of the home heating oil boiling range and, furthermore, it must be a straight run product. So the volume of material available for use as a home heating medium was again reduced as a direct result of the war program. The result of this competition for the straight run middle distillate fraction from crude oil distillation was the greater use of a similar boiling range material produced as a by-product from cracking operations. The cracked oil could not be used as diesel fuel.

What is the difference in quality of



home heating oils produced directly from crude oil and those produced as a by-product of the cracking reaction? The factors which influence the quality of a home heating oil are gravity, boiling range, viscosity, cleanliness, stability and burning properties. In general, the boiling range, viscosity and cleanliness of either a straight run or cracked home heating oil can be and usually are identical. The stability of the cracked home heating oil is inherently poorer than that of a straight run product, but the refiners have developed the technique of chemically treating the cracked material so that the question is no longer serious. The gravity of the two oils is quite different. On the average, straight run home heating oils will have a gravity of about 35 degrees, while a cracked material will be 5 or 10 degrees lower, to 25 or 30 degrees for the same boiling range material. This decrease in gravity indicates that the chemical nature of the oil itself is different. Both oils are hydrocarbons, but in the case of the cracked product the ratio of hydrogen to carbon is lower than in the straight run material. This difference in the chemical composition is the reason that the burning properties of the cracked material are different. In general, the chemical composition of the cracked material is such that it is more difficult to obtain smoke-free combustion than from a similar boiling range straight run material and, furthermore, there is a greater tendency to form carbon by the cracked oils when heated for vaporization prior to combustion. These results are due to the nature of the beast and no reasonable form of treatment by the refiner can alter these basic characteristics.

What happens when such different oils are used in existing burners? Before any oil can be burned, it must be vaporized, the vapors mixed with air in the proper proportions, and then be subjected to sufficiently high temperatures for combustion to take place. That is true whether it be gasoline that is being burned or a heavy residual fuel oil or coal, for that matter. So far as domestic burners are concerned, vaporization and mixture with air take place under two general conditions,—one in which the fuel is totally or partially vaporized from a wick or from a body of liquid or over a heated hearth and the vapors then mixed with air so that combustion takes place. The other method is one in which the oil itself is atomized mechanically, mixed with air and then the mixture of droplets and air heated so that combustion takes place. These are fundamental differences. Where the oil is heated to vaporize and then mixed with air for combustion, a cracked home heating oil will never be entirely satisfactory because, due to the chemical nature of the cracked material, the heating to secure vaporization will leave behind at the point of vaporization a carbon deposition which will interfere with the satisfactory operation of the burner. A cracked product does not make a usable kerosene and neither will a cracked product be a trouble-free material for use in pot type burners and in many of the rotary burners.

In the mechanical atomizing burners, the problem of utilizing a cracked material is not particularly difficult. The fact that the oil is atomized and then mixed with air prior to combustion insures that although a tiny amount of carbon may be formed as the oil droplet is vaporized, the amount is so small that it will be consumed during the period of combustion. The proper utilizing of a cracked home heating oil in a mechanical atomizing burner will require slightly more air to secure smoke-free combustion than would be required for the combustion of a straight run product, but this slight decrease in theoretical efficiency will be more than overcome by the higher heat content of the cracked product.

Of the future, I am not optimistic as to the ability of all of the present domestic fuel burners to satisfactorily use the home heating fuel of tomorrow. It is a reasonable assumption that after the war most of the cracking equipment, both thermal and catalytic, in refineries will continue to operate. It is also a reasonable assumption that there will be a marked decrease in total crude runs, with decreasing amounts of middle distillates available. It is also fair to assume that the use of diesel engines will continue to grow and, therefore, it appears almost certainly that sometime in the not too distant future the home heating oils will have changed from their present composition until, for most uses, they will be a 100% cracked product. Lest this should appear to be too discouraging a picture, I would like to state that it is entirely feasible to use a 100% cracked home heating oil for practically all types of domestic uses. True, the use of such a product in pot type burners and in some rotary burners will not give very satisfactory results. On the other hand, most of the gun type burners should handle such a product with only minor adjustments. The domestic home heating oil of tomorrow will and must be a 100% cracked product and, from all indications today, will be mostly a catalytically cracked product. It will be a staple, clean product of essentially the same boiling range as today's oils; it will have a higher B.T.U. content per gallon than today's oils; but it will not be satisfactory if used in some present equipment.

I do not doubt but that there will continue to be a real demand for a straight run product for specialized domestic uses, but it would appear that this demand should and would be supplied through using a bona fide straight run fuel which is available today, namely kerosene.

Our Chief Job Is Sales

Shape Your Plans to Crack Oilheating's Bottleneck

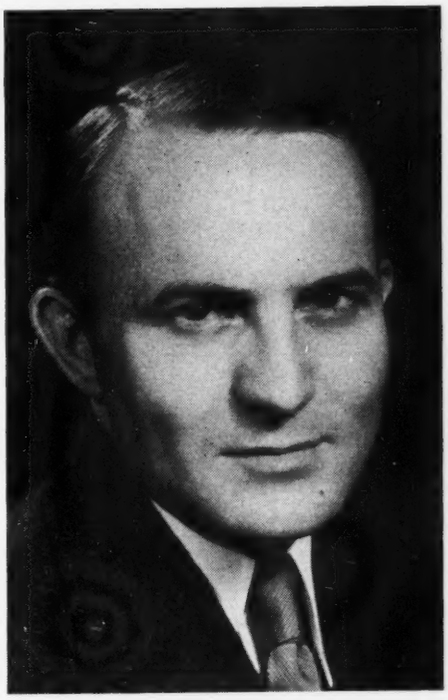
by
R. F. Horan

THESE days the newspaper columns and magazines are filled with postwar plans and dire predictions and warnings of what is going to happen when the war ends. Some commentators and writers foresee an economic collapse as inevitable. The more optimistic say the war will be followed by a tremendous boom in which we all can share. A recent study of the Brookings Institution of the aftermath of former American Wars seems to indicate that after a few months of readjustment and hesitancy, the first couple of years after a war are marked by certain gains. Then comes a period of depression brought about by the public's refusal to buy, and this gradually gives way to an era of increasing prosperity.

Whether or not this pattern will be repeated in the present period no one can safely predict, but one thing seems certain. Regardless of the volume of national business, we are headed for a period of very spirited competition to say the least.

Not long ago, the Research Department of one of the nation's largest weekly magazines—which covered nearly 400 manufacturers in some twenty industries—showed that airplane manufacturers plan to make cameras, optical equipment, farm implements, household equipment and building materials as their plan for keeping up employment. Machinery manufacturers will enter the manufacture of airplane motors and Diesel engines for air power. Also, firms that have in the past made tires will make light metal items and household furnishing suppliers will expand into boats and pre-fabricated houses.

From the above survey, it certainly seems that free enterprise is going to have a "field day," at least for a while, and that no one man's business can be considered his just because it was. It appears that the only thing the distributor and dealer will be able to call his own is his right to compete in a free and open market. There is every indication now that he will be permitted to choose his own



Mr. Horan, who last year was instrumental in organizing the Distribution Division for Oil Heat Institute of America, is Director of Sales Education for the Air Conditioning and Commercial Refrigeration Division of General Electric Company at Bloomfield, N. J. He has had a wide experience in oilburner sales work from ringing doorbells to directing sales. He was one of the founders of the National Society of Sales Training Executives, and is active in the affairs of the organization. By his intimate knowledge of the oilheating business and his complete sales experience, Mr. Horan is unusually well qualified to write on our current needs.

. . . . . .

weapons and that there will be no holds barred. The sacred cows are dead.

The Market Prospects

In the October issue of FUELOIL & OIL HEAT you undoubtedly read with much interest that very excellent study and forecast of our potential postwar market which indicated that we might look forward with hope, as well as reasonable confidence, toward a business volume of twice our best prewar sales

We feel sure, however, that the authors of this study had no intention of leading anyone to believe that this business is already in the bag or that it will be served up to the dealer all "saucered and blowed." No, this future market is a potential market, and the dictionary says that potential means that which can, but has not, happened. This definition should be constantly in mind as we plan our approach to this lucrative field.

At this writing there is nothing to indicate that the oilheating industry will escape the effects of the competitive storm that is now brewing. Consequently, the question is arising in the minds of many leaders as to just how well the industry is prepared to meet the problems during this new and highly competitive era. Anyone who is familiar with the background of the oilheating industry knows that, measured in terms of volume, our record has not been too impressive. As a matter of fact, merchandising men have for years belittled the industry's efforts at sales and sales promotion and have spoken disparagingly of our ability in the field of distribution. One prominent sales consultant humorously remarked some years ago that we had made the sale so difficult that some salesmen had to give a quart of blood every time an oilburner was sold. While these observations have been made for the most part by people not familiar with the intricate details of our business, the very fact that outsiders see fit to comment adversely should cause us to ponder.

In conversations with many of the ranking executives of the Industry in recent months, I have asked for opinions as to the causes of our past limited volume. A composite of the answers seems to boil down to two things: (1) Installation difficulties and excessive service; (2) The cost of securing, training, and maintaining

(*Continued on page* 86)

Motor Starting Relays

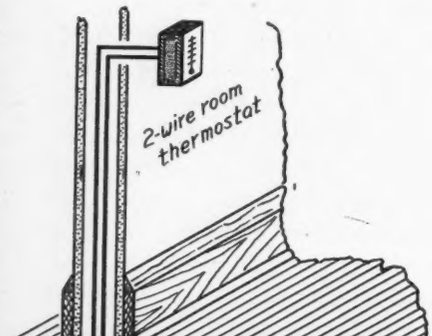
Details of Relays for Circulators and Blowers

by
J. W. Schulz

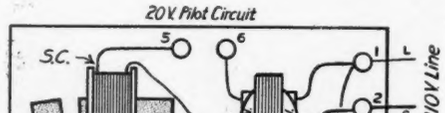
"How can that relay work properly when the red terminal for its thermostat circuit is not connected to anything?", a serviceman asked. He was studying the wiring details of an installation on which the hot water circulator is hooked up as Diag. 1 shows, and though in his ten years' experience he had run across many tricky layouts, he said that this was a new trick for him.

This type relay is used on thousands of installations to control circulators in hot water heating plants and blowers in modern warm air systems. The innards of the frequently used relays and low voltage controls must be understood to arrive at answers to questions about which control can be used with which relay.

A relay which can be used to permit a low voltage control to start and stop a 110-volt motor is shown in skeleton form in Fig. 2. Only a snap-acting control can be used in the pilot circuit of this relay, and of course such a control is connected to the relay by two wires. Inside the control, these two wires go to a mercury tube or to open contacts which are fitted with a permanent magnet to cause them to snap open or snap shut. A tension spring together with a toggle arrangement or jackknife action can be used to provide the snap action needed in a two-wire control. Readers not entirely familiar with these principles and terms first should read "Principles of Electric Relays." (See September, 1944, FUELOIL & OIL HEAT, p. 40.)



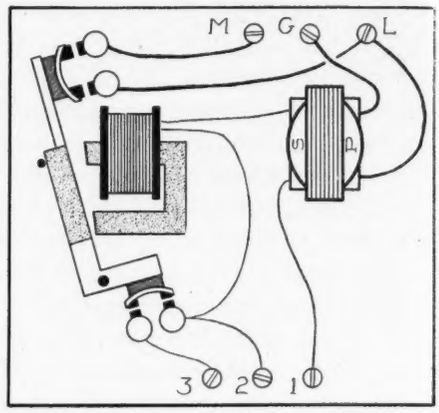
Diag. 1—*The Red terminal of the pilot circuit of a relay of this type need not be used when a two-wire snap-acting room thermostat is used. There's no trick to this, but some experienced servicemen don't know the "why" of it.*



Diag. 2—*Because this low voltage relay has no lock-in contacts, it can not be used with a Series 10 room thermostat.*

When terminals 5 and 6, of the relay in Diag. 2, are connected together by a low voltage control in the indicated pilot circuit, the solenoid coil (labelled S.C.) receives current from the 20-volt secondary winding of the low voltage transformer. The armature of the relay snaps to the right, and this snaps together the load carrying contacts (L.C.C.) and starts the motor. Remember that S.C. means solenoid coil, and L.C.C. means load carrying contacts, for these letters are used similarly in diagrams which come later.

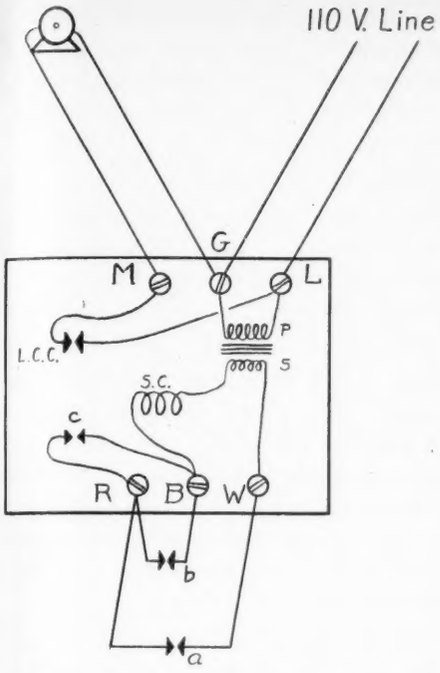
The relay shown in Diag. 3 is similar to the one shown in Diag. 2. At the top



Diag. 3—*Two sets of contacts close when this relay snaps in. The movable parts of each set of contacts are connected together but insulated by fiber or bakelite from the armature.*

are three 110-volt terminals. The line voltage (generally 110 volts on domestic installations) is applied to G and L; the live leg to L, and the ground leg to G. The motor to be controlled by this relay is connected to M and G. M is the live leg to the motor, while G is the ground leg to the motor. Two wires, then, are connected to the terminals marked G. If you use a jumper to connect together terminals 1 and 2 of the low voltage circuit or pilot circuit, the relay snaps in, closes the motor circuit contacts connected to L and M, and starts the motor. The relay shown in Diag. 3 has an additional feature which is not in the relay shown in Diag. 2. It has a set of contacts which open and close with the load carrying contacts and which are connected to terminals 2 and 3 of the pilot circuit. These are low voltage contacts. They play no part in starting and stopping the motor, for they are in the control circuit not the motor circuit. For reasons which will be made clear, these additional contacts may be termed the "lock-in contacts."

In Diag. 4, these additional, control circuit contacts are labelled "c." This diagram shows by symbols and letters the inner electric parts of the relay in Diag. 3. P is the primary winding of the low voltage transformer, while S is the secondary winding which provides, say, 20



Diag. 4—*This shows the electrical aspects of the second set of contacts, the "lock-in" or "hold-in" contacts.*

volts for the solenoid coil (S.C.). L.C.C. are the load carrying contacts. It is important to bear in mind that when the solenoid coil receives current, the two sets of contacts (L.C.C. and "c") snap shut simultaneously, and that they open simultaneously when the flow of current through the solenoid coil ceases.

For a study of the action of this relay, switches "a" and "b" are shown connected to the pilot circuit.

First, consider switch "a" closed, and switch "b" open. The solenoid coil does not receive current, and the motor remains idle, because closing switch "a" alone does not complete the circuit which includes the solenoid coil.

Now, with "a" still closed, suppose that switch "b" is closed momentarily, so that just one flash of current goes through it. Instantly, the relay snaps in because S.C. receives current; the motor starts because the L.C.C. snap shut. And, because contacts "c" snap shut and complete the circuit around "b," the relay stays in and the motor continues to run until switch "a" is opened.

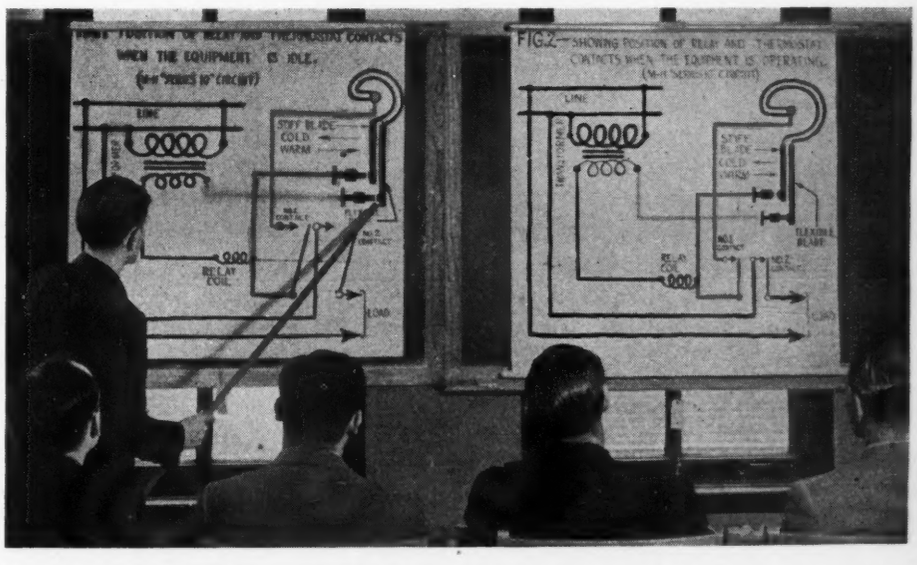
If we close "a" when the motor is idle, then, and leave "b" open, the motor does not start. If next we close "b" only momentarily and then open "b," the motor continues to run until we open switch "a." In this way, "b" can be used to start the motor, and "a" can be used to stop it.

It is apparent also that if the motor is running with "b" open and "a" closed, current is going through "c." Under these conditions, if you open the main switch in the 110-volt line, the motor will stop. And then if you turn on the main switch again, the motor will not start again. To start it, you must close switch "b." Once the motor is started, there is no need to keep switch "b" in its closed position, for this switch shunts "c," which is already closed. Therefore you can consider that for normal operation of switch "b" it need be closed only momentarily to snap in the relay so that "c" will close.

Consider this in addition. With the motor idle and switch "a" closed but switch "b" open, you can start the motor by touching in the relay by hand—that is, by pressing on the armature of the relay to close the relay contacts. When you do this, contacts "c" as well as L.C.C. are pressed together. Under these conditions (with "a" closed to begin with) closing contacts "c" causes the relay to "lock-in." That is the reason we have called "c" the lock-in contacts.

The idea of using lock-in contacts is not peculiar to oilburner controls. It is used commonly for the starters of large three-wire motors, for example. The Off button is switch "a," and in the motor starter application it is normally closed. That is, a spring holds its contacts together, and a touch of the finger opens the contacts. The On button is switch "b," and it is normally open. Pressing it (with "a" closed, of course, because you haven't your finger on "a" to hold it open) starts the motor. With the motor running, pressing "a" opens the solenoid coil circuit, cuts the flow of current to S.C., and stops the motor. The standard relay panel for a large motor has no low voltage transformer. Its solenoid coil and start and stop button circuits are of line voltage, frequently 220-volts.

To come back to the oilheating industry's special applications of this type of relay, notice that in Diag. 4 the control circuit terminals are marked R. B, and W. This stands for the Red, Blue, and White of the famous Minneapolis-Honeywell Series 10 system, for this system employs the lock-in principle for its low voltage pilot circuits. In Diag. 4, we are dealing with the Series 10 principle as it is used in a simple Minneapolis-Honeywell relay, suitable for starting and stopping a hot water circulator or warm air blower. We are not covering the Protectorelay panels, which are oilburner safety control panels. True, in these the lock-in principle is used for the thermostat circuits, but there is a complication not found in a simple relay of the type shown in Diag. 4. When you connect a two-wire snap-acting control to a simple Series 10 relay used to start and stop a motor, of the type shown in Diag. 4, you can simply use the White and Blue terminals of the thermostat circuit in the fashion indicated by Diag. 1. You cannot do exactly that with all models of the Protectorelay oilburner panels (although with the new models for domestic burn-



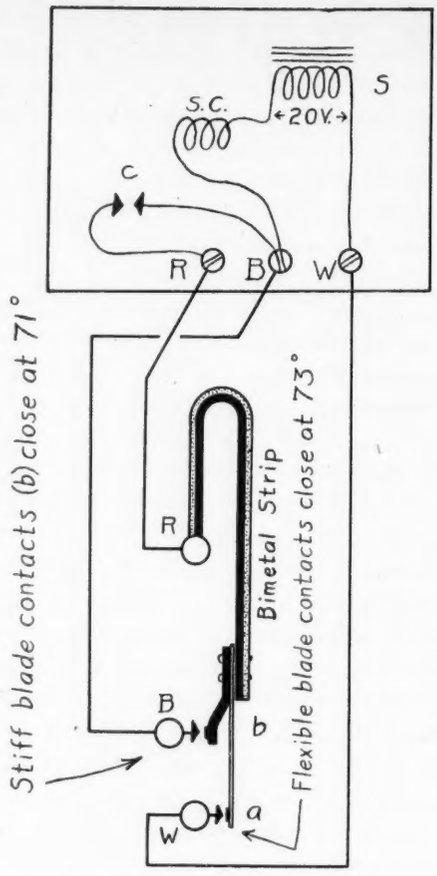
Students of oilheating controls *seldom find a satisfactory substitute for personal instruction and study of the "lock-in" or "hold-in" principle used in Series 10 circuits.*

ers you can); with some Protectorelay panels, you have to place a jumper from the Blue to the Red terminals of the panel when you use a two-wire snap-acting control in the pilot circuit. If you want to play safe, use such a jumper for all panels, even panels of the type shown in Diag. 1, for there is no harm in using it, and you may not know whether or not it is needed for the particular panel you are working on. To understand how the jumper fits into the wiring of Diag. 1 simply refer to Diag. 4. Connected from the Blue terminal to the Red terminal, it simply shunts the lock-in contacts "c," which are not in use when a two-wire snap-acting control is connected from Blue to White.

Diag. 5 covers the design features of the Minneapolis-Honeywell Series 10 type room thermostat, which does not have snap-acting contacts, which must be used only with a Series 10 type panel or relay, and which is connected by three, not two, pilot circuit wires.

In the upper part of Diag. 5 is shown the secondary circuit of a simple relay which has a set of lock-in contacts "c." The matter can be simplified now by omitting from this drawing the 110-volt wiring of the relay, because it is established that when the solenoid coil (S.C.) receives current, the motor starts because a set of load carrying contacts in the 110-volt circuit are snapped together. For a clear understanding, Diag. 5 should be studied with frequent reference to Diag. 4, and with knowledge of the significance of the switches labelled "a," "b," and "c" in both diagrams.

The lower part of Diag. 5 shows, greatly simplified, the principle parts of a Series 10 room thermostat. This has a U-shaped bimetal strip mounted on a post near the letter R in the drawing. Consider the room temperature at 75° to begin with, and the thermostat setting to be 72°. As the room temperature drops, contacts "a" will close because, as indicated in the drawing, the flexible blade contacts close at 73°. The blade on which the movable contact (the right hand one of the set of contacts labelled "a") is mounted is flexible so that a further movement of the lower end of the bimetal strip is not blocked by the closing of the contacts labelled "a." When the room temperature drops further, to 71°, the stiff blade contacts ("b") are closed.



Diag. 5—*The inverted U-shaped bimetal strip represents the temperature sensitive element of a Series 10 room thermostat. Different arrangements are used in different models. The electric heater element used to permit adjustment for short "On" periods and smooth heating is not shown in this diagram.*

. . . . . .

This relay may be imagined to control a hot water circulator motor in a modern hot water heating plant. With this motor idle to begin with because the room temperature is 75°, contacts "a" and "b" are open, of course. Also, contacts "c," the lock-in contacts, are open because no current is flowing through S.C. which closes them. Now, the room temperature drops from 75° to 73° and contacts "a," the flexible blade contacts, are moved to their closed position as a result. The motor does not start, because "b" and "c" are both open. Look over both Diags. 4 and 5 to get a clear picture of this. The room temperature continues to drop. At 71° or one-tenth of a degree above this, contacts "b" are one-hundredth of an inch apart, let us say (these are the stiff blade contacts), and then someone slams a door nearby and a flash of current goes through contacts "b" because they vibrate and touch each other momentarily. One shot of current through contacts "b" is enough to energize S.C. and snap in the relay, and this closes the lock-in contacts "c." Even with contacts "b" open now, the relay stays locked-in and the motor continues to run—until the room temperature comes up to above 73° and points "a," the flexible blade contacts, are opened as a result.

The stiff blade contacts start the motor, and the flexible blade contacts stop it. That is the underlying principle of the Series 10 thermostat. When the room has chilled just enough to place the flexible blade contacts together, but to leave the stiff blade contacts open, you can touch in the relay by hand and it will stay in until the flexible blade contacts are opened by an increase in room temperature. Suppose the motor is running and the flexible blade contacts are closed but the stiff blade contacts are open. If the current fails momentarily or if you snap the main switch off and then on, the motor will stop but it will not re-start immediately. It will start again only when the room temperature has dropped sufficiently to close the stiff blade contacts. That explains why a serviceman may walk into a basement and find the equipment running, and become bewildered because it won't start again after he has stopped it by opening the main switch for just a few seconds. One serviceman, puzzled by this for years, had figured out that it happened entirely too frequently to be accountable to the controls going to their "off" position during the short time that he had the main switch open.

Diags. 4 and 5 can give an appreciation of this feature. Proper operation is insured by designing the Series 10 circuit so that both sets of contacts in the thermostat have to be closed before the relay can snap it. If you simulate trouble in the thermostat by inserting a strip of paper between either set of contacts, the relay can not snap in. Check back on Diag. 4; contacts "a" and "b" have to be closed to snap in the relay.

Diags. 6 and 7 show variations in control wiring that may be used with a Series 10 type simple motor-starting relay of the type shown in Diags. 3, 4, and 5. Diag. 6 may be used also for any model Protectorelay. Diag. 7 can be used for the new, popular domestic burner Protectorelays, but not for certain models which need a jumper from the Red to the Blue

ANNOUNCEMENT

For over 30 years prior to the war, the Kresky Manufacturing Co. had produced the widely known Kresky Oil Burner and the Kresky line of oil burning appliances of which it is the basic feature.

Early in the war, our facilities were converted entirely to war production, which compelled us to suspend our regular trade. To meet war requirements, the Kresky plant was doubled in capacity and, by outstanding performance, won the coveted Army and Navy "E".

We are now approaching the completion of contracts with the armed forces. The removal of priorities has cleared the way for our regular, peacetime production. We have resumed active relations with our distributors, and are adding a substantial number in new territories.

Of prime importance is the fact that war activity did not take us out of our regular field. Our production for the armed forces consisted of Kresky Burners and Kresky Heaters. Resuming our peacetime output involves no change in equipment, nor personnel, and not an hour's interruption in our operation.

Within a minimum time, at double our pre-war capacity, we shall be producing our full line of Kresky Oil Burners and Kresky Oil Burning Appliances, and rapidly expanding their intensive distribution to a nation-wide scale.

KRESKY MANUFACTURING CO.

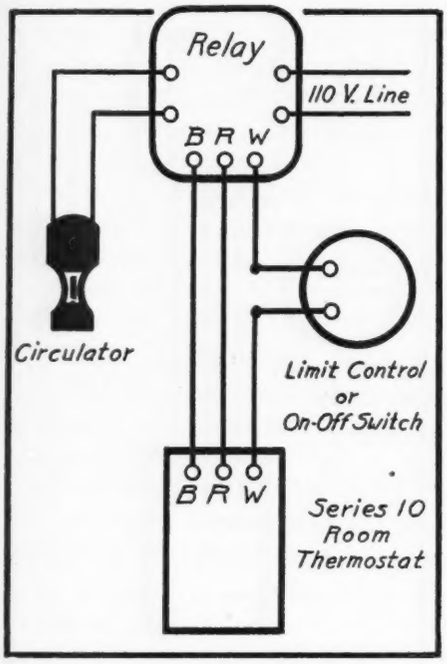
Established 1910

PETALUMA, CALIFORNIA

IMPORTANT: ***Wholesalers interested in distributing Kresky Oil Burners and Oil Burning Appliances and Dealers desiring information regarding the line are invited to write us for full details.***

terminals when a simple two-wire limit control or room thermostat is connected to the thermostat circuit.

Diag. 6 places a limit control or an on-off switch in series with a Series 10 type room thermostat. It is used, for example, on an installation which has a reverse-

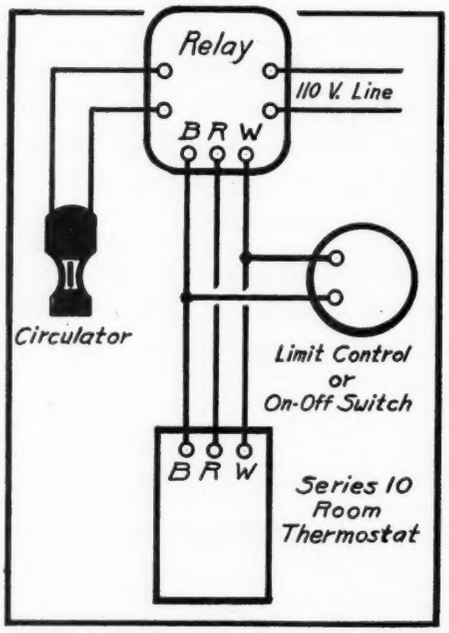


Diag. 6—*Use this circuit to connect a snap-acting limit control in series with a Series 10 room thermostat (or any other Series 10 control). This wiring can be used for any relay or Protectorelay panel which has a Series 10 type pilot circuit.*

. . . . . .

acting boiler temperature control that the dealer desires to wire low voltage and in series with the room thermostat. When the boiler is hotter than the reverse-acting control is set for, say 165°, the thermostat can start and stop the circulator. If the boiler is cool, the reverse-acting control keeps the circulator idle although the contacts of the room thermostat are closed. Check back on Diag. 5 and you can understand readily that opening the circuit of the White wire to the room thermostat prevents any flow of current from the secondary of the transformer, thus serves to "kill" the relay just as effectively as opening the main switch.

Diag. 7 places a limit control (or on-off switch) in parallel with the Series 10 type thermostat used to start a circulator. The motor will start if the room thermostat circuits close, or if the circuit of the limit control closes. Used more frequently with stokers than with oilburners, this diagram applies where a control is supposed to turn on the circulator (even when the room thermostat circuit is open) when the boiler tends to overheat for any reason, and turn the water in it to steam. On certain installations of heavy-oil burners particularly, a steady burner run of about two hours on a cold morning may bring the fireboxes up to such white-hot heat as to overheat the water in the boilers after the circulators and the oilburners stop because the buildings are heated sufficiently. Under these conditions, a reverse-acting limit control is wired as Diag. 7 indicates, in parallel with the room thermostat, and set to start the circulator at about 225° or some other temperature which is selected as the highest suitable for the boiler, at the location of the control. Running the circulator drops the boiler temperature, and especially rapidly when the oilburner is not running. No great upset in heating results from running the circulator for a few minutes at a time when heat from the firebox is tending to boil the water in the boiler, because usually the circulator takes these



Diag. 7—*This circuit connects a snap-acting limit control in parallel with a Series 10 room thermostat. It can be used for any plain motor-starting relay and with the new Protectorelays for domestic burners.*

. . . . . .

extra runs on the coldest days, when the rate of loss of heat from the building is high and the burner will have to start again shortly.

"Know your controls and relays from A-to-Z" is good advice for the serviceman and installation man who want to get the most out of the equipment they work on. But here is another bit of advice: If you do not know your controls and relays backwards and forwards, you'd better play safe and use only the standard, well known methods for installing and servicing them. Don't try tricks unless you understand thoroughly what you are doing. The start-out of a good education in controls consists of learning to play safe.

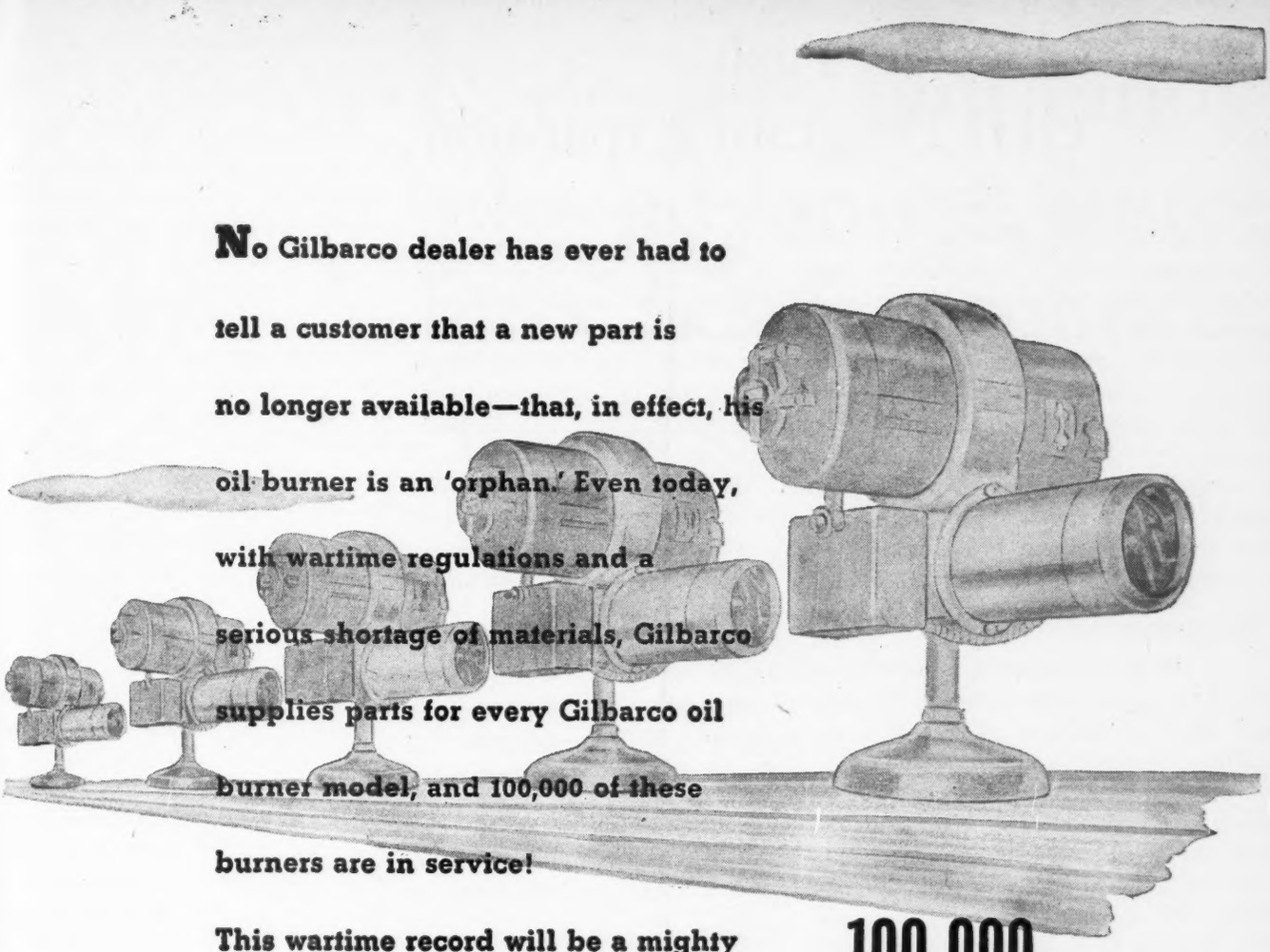
OPA Surveying Prices Of Domestic Oilburners

RECOGNIZING THAT THE MARCH 1942, prices at which oilburners are now frozen may not be sufficient to allow a profit on new production, the Office of Price Administration is investigating the price structure of the industry with a view to possible revision of the price ceiling. Contrary to the thinking in the recent past, the revision may be made as a percentage increase for the entire industry, rather than for individual manufacturers on their appeal. It is explained that the time and study required to review individual appeals would make such a procedure impossible with the present facilities of OPA's Washington office.

Manufacturers have expressed concern over the price structure in the industry. With labor and materials prices considerably increased since March 1942, they are not anxious in many cases to make burners to be sold at their present ceiling prices. Domestic oilburner shortages are acute in many areas, and production of burners for replacement is imperative.

In order to facilitate OPA's study of prices, they have requested all oilburner manufacturers to send catalogs, price lists and freight terms together with the appropriate cash discounts and trade discount sheets to all classes of customers which were effective during March 1942. Prices, terms and discounts should be sent on each model of oilburner designed to use No. 5 oil or lighter. If these published prices show a need for a price increase at present such an increase will be granted to the entire industry.

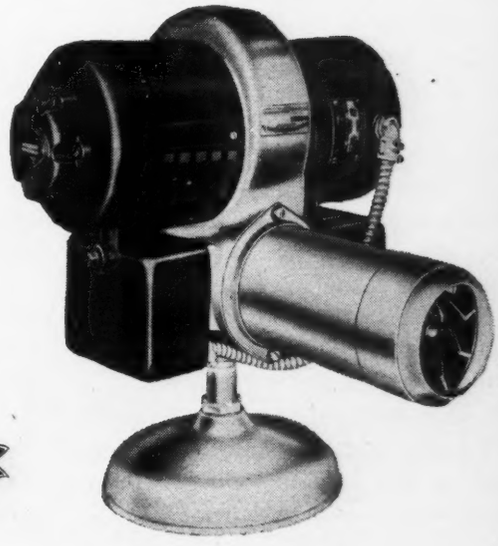
This price information should be sent to Milton R. Dallin, OPA Building Materials Branch, Federal Office Building No. 1, Washington 25, D. C.



No Gilbarco dealer has ever had to tell a customer that a new part is no longer available—that, in effect, his oil burner is an 'orphan.' Even today, with wartime regulations and a serious shortage of materials, Gilbarco supplies parts for every Gilbarco oil burner model, and 100,000 of these burners are in service!

This wartime record will be a mighty strong sales argument for post-war sales. And if you're planning now to get in on that big market, with a Gilbarco franchise, selling even finer Gilbarco oil burners, better write us about it now!

100,000 AND NOT AN 'ORPHAN' IN THE LOT!



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Midwest Dealers Push OHI Program Expansion

DEALER AND DISTRIBUTOR MEMBERS of OHI's Midwest Distribution Division met at Chicago, October 9, to present and promote parts of a program for postwar expansion. Concrete evidence of a serious attempt to carry through the program came from the directors of Oil Heat Institute the next day when they voted to hire A. E. (Jack) Hess as managing director to carry through the program. A schedule of eleven speakers was heard during the day, followed by an open forum session in the evening.

Manufacturers' Responsibilities

W. A. Matheson, president of Williams Oil-O-Matic Heating Corporation, urged dealers to sell their market individually, and warned against the feeling that oilheating could be sold for the individual by association action. "Creative selling," Mr. Matheson said, "is a matter for the dealer to undertake seriously with the help of his manufacturer, and selling is going to be necessary if this industry is to attain the size and prominence we all believe it deserves. No association can wet-nurse its individual members to success. It can only promote the general welfare of its industry, and leave the success or failure of its members to their own actions." Mr. Matheson pointed out that the postwar period would provide plenty of "raw" manpower that must be trained to sell, install and service the industry's equipment by the dealers with the help of their manufacturers. He suggested that dealers select the manufacturers with whom they are to do business after the war with a view to (1) the selling advantages that the equipment offers; (2) the help the manufacturer can give to organize a specialty sales force, train it, and follow through with a constructive sales program; (3) the service and installation training the manufacturer will provide, and the engineering help he is equipped to give; and (4) the protection the manufacturer provides for a franchise.

Fred N. Beckwith, executive secretary of the Oil Heat Institute of New England, the first speaker on the program, outlined a constructive program for the Division to help its membership to greater profits. The program included a campaign to use and publicize the OHI insignia through membership certificates for members, window and truck transfers, as well as transfers for installed equipment, certificates of installation, and identifying lapel buttons for dealers and their employees.

Need for a standard accounting system that would reveal all costs of doing business was emphasized by Mr. Beckwith. This should be a simple system that could be used by small as well as large dealers to check their cost items. He also pointed to the need for service and installation training for the industry's new employees, and outlined a course of instruction that the New England chapter is undertaking with the cooperation of the University of New Hampshire. This course will be available to dealers' men, and to ex-service men who will be eligible for vocational training under the G.I. Bill of Rights. Other points in the proposed program included promotion of standard codes more in keeping with the industry's record of safety, free employment bureaus for dealers in local areas, and a bulletin service or a periodical section to provide an interchange of news and views between chapters.

Increased Yields

W. W. Vanderveer, director of PAW's District 2, told his audience that current refinery yields of burning oils were considerably above a year ago in the District, and that about 5,000 barrels a day of product was available for District 1 that could not be shipped. Following Mr. Vanderveer's revelation, E. E. Hadlick, president of the Northwest Petroleum Association of Minneapolis, presented a resolution directed to PAW and OPA at Washington:

"(1) To permit immediate reconversion to oil of all installations which were compelled to convert, or voluntarily converted during the emergency, to some other form of fuel;

"(2) To take prompt action in all areas, when the supply position permits, establishing a value for fueloil ration evidences which will permit consumers of all grades of fueloils to obtain their normal requirements."

Myron Holmgren, chief of fueloil rationing for OPA at Washington, outlined a policy of generally easing oil allowances for hardship cases as the supply becomes more ample. The policy will give automatic approval to applications for more fueloil by those who have received hardship rations in the past. The size of the supplementary ration will be limited to the greatest amount of oil which the applicant has received on previous hardship applications in any season. New applications for hardships rations will be examined more closely to determine the need and the amount to be allowed.

Reconversions First

Mr. Holmgren also outlined the policy on easing rationing restrictions which may be expected. The first step, he said, would be to permit reconversions back to fueloil, possibly giving blanket permission to all former users to go back to burning oil. (Since Mr. Holmgren's talk PAW has recommended this procedure to OPA. See "Trends.") Second, we may expect an increase in the value of rationing coupons as the supply situation improves, and finally, an easing of restrictions on new oilburner installations. He said nobody could now predict when the rationing program would end, but both PAW and OPA are anxious to end rationing as soon as possible.

Milton Dallin of OPA's Building Materials price division, sketched the policy on pricing which currently is being followed. He said Regulation 251 now is being revised to permit establishing prices on the bases of cost plus the usual mark-up. Since the cost of manufacturing and installing oilburners has increased during the war period, the industry now is being studied to determine the amount by which the manufacturers' ceiling prices should be increased, if any, after which dealers will set their installed prices under PR 251. Mr. Dallin pointed out the extent to which price control had curbed inflation, saying that it had saved civilians $280 per capita on their personal purchases during this war, as compared with the prices they would have paid had the price structure followed the pattern of the last war. This saving was

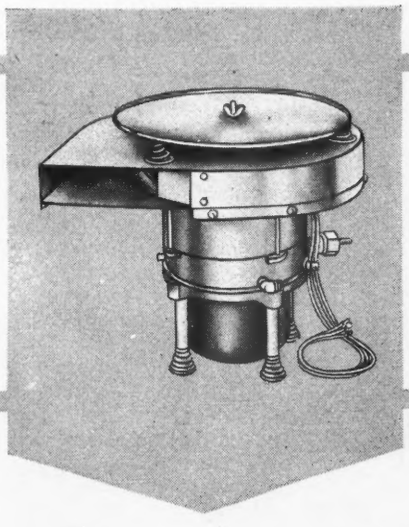
Only G-E dealers will enjoy this great sales advantage in tomorrow's busy heating market

IT will not require much "selling" after the war. For the public already knows about . . . *respects* . . . this sales advantage. And it's exclusive with distributors of G-E Automatic Heating Equipment.

It is, of course, the famed wartime research and engineering experience of General Electric. New knowledge that, in normal times, would have taken years to acquire, yet which G-E with its facilities for research was able to assemble, study and apply at war's tempo.

You'll appreciate what this can mean, profit-wise, when the General Electric heating units of postwar appear. They'll be quieter, more compact and efficient, easier to install . . . *and easier to sell!* In tomorrow's heating market, the dealer with the G-E franchise will have a decided jump on competition. *General Electric Company, Heating Division, Section 44811 Bloomfield, New Jersey.*

☆ BUY . . . and hold . . . WAR BONDS ☆



THE EXCLUSIVE G-E MOTOR COMPRESSOR— a revolutionary research development in prewar G-E heating units. Oil pump, fan, compressor, and motor mounted on one-piece shaft for permanent alignment. No gears, pulleys, or belts to cause trouble. Self-lubricating. Complete assembly spring-mounted, flexibly coupled, for quiet operation. Out of today's research will come other exclusive selling features . . . and new opportunities for G-E Heating equipment dealers.

Automatic Heating by

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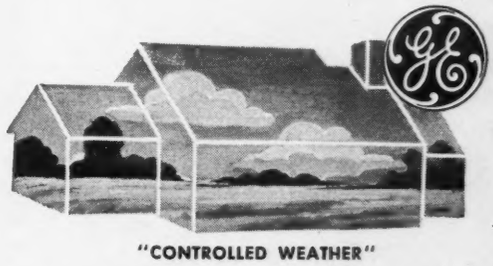

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Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA," Sundays, 10 p. m., EWT, NBC..."THE WORLD TODAY" News, Every Weekday, 6:45 p. m., EWT, CBS

fuel oil & oil heat

made possible by OPA at a per capita cost of $3 for the support of OPA.

C. E. Lewis, vice-president of Perfex Corporation and president of OHI, told the distributors of the work the Institute already had done to protect the industry during the war period, and described the program for the future. He urged dealers to start now to lay plans for the employment of their sales and mechanical help, and to plan their training programs.

Directors of OHI met October 10 with C. Muirhead of the Office of Civilian Requirements, Henry Norris and Leigh Smith of the War Production Board, and Milton Dallin of OPA. The next meeting of the Board will be at New York, January 9, 1945.

Ask End of Rationing At New England Meeting

MORE THAN 200 New England dealers and members of their organizations met at Boston, October 18, for the Fall Industry Meeting of the Oil Heat Institute of New England, and adopted a resolution calling for (1) permission to reconvert to oil all installations that were converted to other fuels during the emergency; (2) prompt action by government agencies in all areas where the supply position permits to restore permitted consumption of all grades of fueloil to normal; and (3) immediate steps toward the cancellation of fueloil rationing. The principal speaker at the industry session was A. P. Frame, director of refining for PAW, who minimized concern over the possibility that heavier grades of oil might cause an excess of service this coming winter. Most of Mr. Frame's talk is presented elsewhere in this issue.

Fred N. Beckwith, executive secretary, reported to the membership on the Midwest meeting of the OHI Distribution Division, and outlined again the program he has proposed. J. Henry Brody, president, predicted that the oilheating industry is on the threshold of great expansion, and he urged dealers to get ready for the expected increase in business.

Members amended the organization's constitution to make the annual meeting fall in the latter part of April or early May instead of March, when dealers are busy ending the heating season in New England. It is felt more dealers will be free to take part in their annual meeting at the later date.

Pacific Coast Distributors Hold First Division Meeting

WITH MORE THAN 110 oil equipment and oil distribution firms represented, the Western Conference of the Distribution Division of the Oil Heat Institute of America was held in Portland, Ore., October 21. This meeting, which covered the problems now facing the industry as well as a survey of the future, was the largest ever assembled in this area. Those in attendance included representatives from Oregon, California and Washington.

Headliner among the speakers was C. E. Lewis, vice-president of the Perfex Corporation, president of Oil-Heat Institute of America. Mr. Lewis brought out the restrictions and problems that confront the equipment dealer and the oil distributor at the present time, and traced the development of the Oil-Heat Institute and particularly of the Distribution Division.

Mr. Lewis spoke of the surveys that had been made nationally to determine the available market for oilburning equipment, of the developments which equipment manufacturers were making to ensure efficient operations, and stressed the development of the postwar market, urging immediate preparation to take advantage of this market in the face of organized selling campaigns planned now by other heating interests.

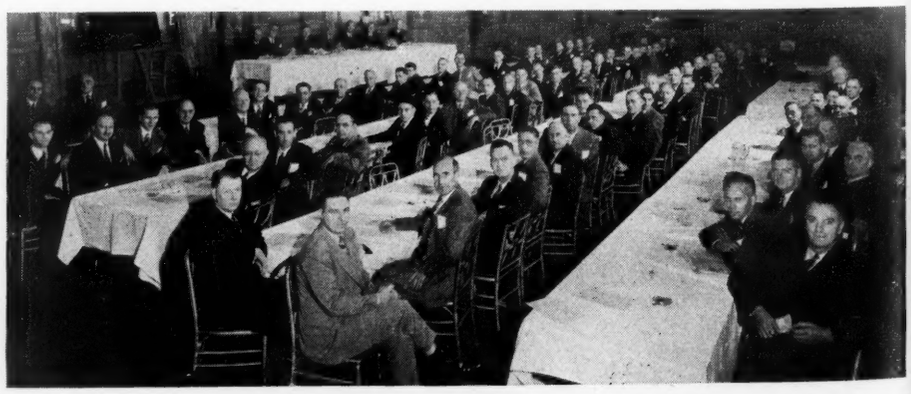
D. W. Smith, member of the Petroleum Industry War Council, gave an industry picture of the fueloil supply as it affected the Pacific Northwest region. Explanations of the impending shortage showed that the conservation program of the PIWC is a job for every member of the industry and not for the men on PIWC alone. He stressed the fact that honesty with our customers at the present time will pay dividends in postwar operations.

Mr. Smith's remarks followed the PIWC slide picture, "It Pays Dividends," and he was able to drive home some of the factors pictured in this display as contributing to the necesity for conservation. The film was presented by local OPA officials and followed a discussion of the latest rationing amendments affecting this area by George L. Curry, Fueloil Rationing Representative of the Office of Price Administration in Portland.

Mr. Curry's remarks explained the amendments in terms of the industry. Particular attention was given to the recently added form, R-1198, which had caused some consternation among oil dealers. The whole procedure of rationing including the issuance and handling of coupons was given briefly.

W. J. Cannon, who is replacing James Scully as Regional Fuel Rationing Representative in Seattle, supplemented Mr. Curry's remarks and asked industry cooperation in holding down unauthorized and questionable oil installations until release by OPA or PAW.

James C. Yeomans of the Multnomah Fuel Co., Portland, Oregon, discussed "Possibilities of Electric Heat." With the vast power output from Bonneville and Grand Coulee dams available in the Pacific Northwest, equipment dealers were concerned with the competition to be ex-



Pacific Coast *members of OHI's Distribution Division hold their first meeting and dinner at Portland, Ore.*

Master Kraft

REG. U. S. PAT. OFF.

OIL HEATING

SYMBOL OF QUALITY AND ADVANCED DESIGN

You, Mr. Dealer, can make real money in the post war period by selling *quality* oil heating equipment, *specifically designed and priced for the post-war market.* After V-Day the big problem will be to supply the demand. The public knows that—and is prepared to pay good prices. BUT . . . remember that the war has made new millions of men and women mechanically minded. This time *—they'll spot the difference*—they will know top quality and advanced design when they see it. In Master Kraft Oil Heating and Air Conditioning equipment you can give post war buyers TOP VALUE. . . . The Master Kraft name has —for more than a generation stood for top quality, precision workmanship, and advanced engineering principles. *You can trade on that*—post war!

HALL MARK OF DEALER COOPERATION

No matter how smart an oil heating dealer may be in his own right—his success can be *greater* if he represents a manufacturer who will work with him and help him.

The firm of Harvey-Whipple, Inc., does just that . . . gives to dealers the kind of cooperation that helps build success. When a dealer requests it, we train his service or installation men at the factory. If he needs trained salesmen, we train them in the Harvey-Whipple School of Merchandising. If he wants *proven* tailor-made advertising or selling plans, we turn them out for him. If he wants further business counsel, he knows where to get it: the principals of our organization—the men who founded it—are known by their first names to nearly every Master Kraft dealer.

Why not get this kind of cooperation in building *your* post war selling and servicing organization? Write us.

HARVEY-WHIPPLE

INCORPORATED

SPRINGFIELD, MASSACHUSETTS

pected from the use of electricity as a fuel.

Harry Norquist, president of the Campbell-Norquist Company, Portland, concluded the list of speakers with a discussion of the oilburner business, repairs, service and installations.

Floyd W. Campbell, V. P. of the Portland Oil Company and Oregon Chairman of the Distribution Division of the Oil-Heat Institute of America, opened the meeting and welcomed the guests. M. N. Vining, Vice-Chairman for the West, presided at the meeting. C. A. Marsh, president of the Oregon Fuel Merchants Association, hosts for the meeting, invited those in attendance who were not members to join the association and the OHI. Charles R. Holloway, Jr., Liberty Fuel & Ice Co., Portland, was general chairman of the event.

Gasoline Rationing Returns to Fuel Rationing Division

A DECISION IS REPORTED to have been made by Chester Bowles, OPA Administrator, to combine the Automotive Rationing Division and the Fuel Rationing Division into one unit, to be headed by John Neukom, present Director of fuel rationing. The Automotive Division rations gasoline, automobiles and tires. In the early days of rationing, gasoline rationing was started by Joel Dean and then when fueloil was to be rationed, both were under the one head. But two years ago this month gasoline was divorced from fueloil and put into the newly created Automotive Division under Charles Phillips as director. Now it comes back with fueloil. Changes, if any, in personnel and other administrative details have not yet been worked out.

Two key men are leaving the Fuel Rationing Division. Myron Holmgren, chief of the Fueloil Rationing Branch, is returning to his civilian work as vice-president of Hughes Oil Co., Chicago. He will be succeeded as branch chief by James Scully, now regional director for fuel rationing in the Pacific Northwest and active in the program since its start. George Traver, head of the Industry Relations Section, is leaving to head public relations for the National Board of Fire Underwriters at New York. Both men did outstanding work for the Division.

Eastern OHI Meeting November 28 at New York

THE EASTERN SECTION of the Distribution Division of Oil-Heat Institute of America will hold its fall meeting for oilburner dealers and fueloil distributors at New York's Hotel Commodore on Tuesday, November 28, starting at nine A.M. Gus Burrell of Harrison, N. Y., vice-chairman for the East is in charge of arrangements for this important session, and promises a program that covers most of the industry's immediate problems.

While the list of speakers has not yet been officially announced, some of them are known. John Neukom, Director of Fuel Rationing Division, OPA, will bring the thinking of his group on what's ahead for rationing; C. E. Lewis, president of OHI, will discuss dealer responsibilities toward more effective postwar operation; Elwin Hadlick of Minneapolis has been asked to clear up certain legislation affecting oilheating; Fred Beckwith of Boston will point out to dealers what OHI can do for them; Jack Hess, OHI's new managing director, will explain the projected wider activities of the Institute that led to his joining the organization; Robert Gray of FUELOIL & OIL HEAT will talk on today's gas competition.

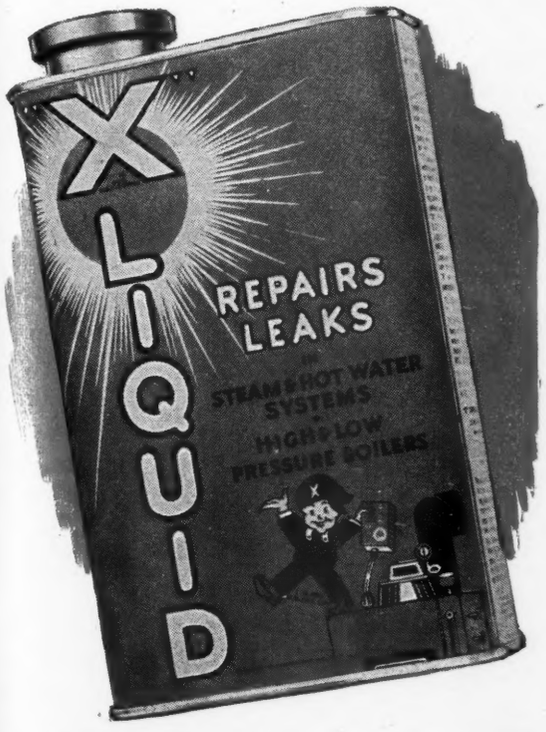
DEGREE DAY TABLES

ONE MONTH ONLY					LAST SEASON			
	September		Percent		(Sept. 1 to May 31)			Percent
Normal	1943	1944	Change*		Normal	1943	1944	Change*
116	190	127	+ 9.4	Albany	6587	7334	7122	+ 8.1
12	19	4	— 66.6	Atlanta	2999	2820	2880	— 3.6
34	54	27	— 20.5	Baltimore	4509	4409	4445	+ 1.4
98	120	90	— 8.1	Boston	5853	6156	5986	+ 2.2
116	191	119	+ 2.5	Buffalo	6587	7275	6904	+ 4.8
84	167	77	— 8.3	Chicago	6205	6849	6381	+ 2.3
52	88	41	— 21.1	Cincinnati	4993	4885	4927	— 1.3
92	139	89	— 3.2	Cleveland	6094	6319	6126	+ 0.5
5	1	0	—100.0	Dallas	2378	2321	2436	+ 2.4
124	93	87	— 45.9	Denver	5784	5282	5815	+ 0.5
99	160	70	— 29.1	Des Moines	6356	6718	6406	+ 7.8
109	171	91	— 16.5	Detroit	6502	6800	6561	+ 0.9
126	188	100	— 20.6	Grand Rapids	6655	6873	6654	— 0.1
106	129	87	— 17.9	Hartford	6037	6433	6284	+ 4.0
288	226	268	— 6.9	Helena	7600	8483	7702	+13.4
2	2	0	—100.0	Houston	1335	1212	1326	— 0.6
65	112	34	— 47.6	Indianapolis	5459	5657	5383	— 1.4
50	60	23	— 54.0	Kansas City	4971	5064	5218	+ 4.5
5	0	5	..	Los Angeles	1362	1125	1408	+ 3.3
34	0	16	— 52.9	Louisville	4421	4499	4315	— 2.3
120	204	116	— 3.3	Milwaukee	6955	7649	7081	+ 1.8
163	236	134	— 17.7	Minneapolis	7878	8550	7648	— 2.9
2	0	0	—100.0	New Orleans	1210	1205	1234	+ 1.8
51	65	35	— 51.3	New York	5270	5308	5364	+ 1.7
164	108	62	— 62.1	Omaha	7116	6288	6384	—10.2
36	49	31	— 13.8	Philadelphia	4732	4913	4842	+ 2.3
69	86	86	+ 24.6	Pittsburgh	5427	5666	5435	+ 0.1
179	238	192	+ 7.2	Portland, Me.	7128	7786	7725	+ 8.2
109	15	68	— 37.6	Portland, Ore.	4214	4050	3958	— 6.4
104	112	61	— 41.2	Providence	5946	5958	5783	— 2.7
36	56	17	— 52.7	St. Louis	4602	5308	5364	+ 1.6
95	26	67	— 29.4	Salt Lake City	5568	5499	6118	+ 9.8
122	101	149	+ 22.1	San Francisco	2569	2446	2454	— 4.4
281	351	281	..	Sault Ste. Marie	8901	9416	8732	—18.9
174	81	93	— 35.0	Seattle	4560	4333	4101	—10.0
98	194	103	+ 5.1	Toledo	6202	6619	4611	—25.6
43	64	24	— 44.1	Washington	4582	4376	4486	— 2.0

*Compared with normal.

"X" BOILER LIQUID

Keeps Old Boilers Fit for Wartime Jobs



You've got a big responsibility to your customers today—to keep present heating plants in service and make the available supply of fuel oil produce maximum heat. A clean, rustproof and leakproof system is the answer. "X" has the heating system service products to enable you to do this important wartime job. . . . "X" FLUSH & RUSTOFF to really clean the system and KEEP it clean. . . . "X" LIQUID, the Industry's leading stopleak since 1916, to repair and continue old boilers in good service.

the Famous **"X"** *Line*

"X" FLUSH & RUSTOFF • "X" LIQUID
"X" PIPECUT OIL
"X" PIPEJOIN

Write for the facts . . . **"X" LABORATORIES, INC., 25 WEST 45th ST., NEW YORK**

Showroom for Postwar

BOLSTER BROS., INC., East Orange, N. J., get ready for postwar with an impressive new showroom. Pictured at right are, first, William Bolster, Jr., then Ray Bolster. Below are exterior and interior views of the new quarters and a group of well-wishers that called on opening night.

Home Reconversions Cleared, Residual Rations Increased

EFFECTIVE IN EARLY November, there will be no further restrictions on reconversions to oil for homes or other buildings using less than 10,000 gallons of fueloil a year. This means that a ration will be granted, without the necessity of proving hardship, to any such consumer if he converted from oil to another fuel after July 31, 1942.

At the same time users of residual oil for heating and hot water were told that they can now get additional rations to bring up their consumption to normal . . . their entire ration cut is restored. This applies only to users of No. 5, No. 6 or Bunker oils, and is being granted because the high level of refinery runs needed to provide enough aviation gasoline has brought about a residual surplus.

This surplus situation, however, does not apply to distillate home heating oils nor kerosene. In allowing domestic reconversions, Washington emphasizes that this must not be construed as an admission that these products are in easy quantity. In fact, it took some weeks for the supply agency to be sure that it could spare the 1½ million barrels estimated as needed for the reconversions, and this amount was not finally assured until after the revised world program was completed at mid-October.

Terminal stocks in the East and Midwest are high at the moment and this has led some industry men to believe that available heating oil supplies are running ahead of rationed needs. Responsible Washington men point out, though, that for reasons of military security it was believed best to maximize civilian stocks in early fall so as to be able to minimize the amount having to be brought in during winter. Thus, today's high civilian stocks are expetced to dwindle with cold weather and end the heating season at just about where they were last year. There is little possibility, these men point out, that coupon values will be raised until such time as military needs fall off after the European war ends.

◈

Ernest L. Hughes, president of Hughes Oil Co., has been appointed special assistant to *Harry F. Sinclair,* president of Sinclair Oil Corp.

Profit-Minded Heating Dealers . . .

Sign up now with FLUID HEAT!

ARE you interested in a source of sure-selling oil-heating equipment, put out by a long-established leader in the heating field? If so, be the first in your area to file your name with Fluid Heat. Fluid Heat will be, even more than in the past, a good line to handle—and you lose nothing by stepping in on the ground floor by acting now.

When you tie up with Fluid Heat, you're lining up with a highly-rated, nationally-known manufacturer who has a reputation for quality products and fair dealer policy. Fluid Heat's valuable wartime experience in the design and construction of aircraft and truck heaters, plus its sixteen years of pioneering in the development and manufacture of automatic combustion and heat transfer equipment, will be used to make Fluid Heat domestic heaters an even better "buy" than in the past—and will be an even more profitable line for wide-awake dealers to handle.

Fluid Heat dealers will have a *complete* line of home-heating equipment to sell: oil burners, water heaters, air-conditioning furnaces, burner-boiler units. They'll have *two* big markets to sell them in: the "new homes" market and the "replacement" market. The Producers' Council estimates that 900,000 *new homes* will be built during each of the early postwar years—and there are millions of owners of homes already built eager to *replace* their present heating equipment.

That's Fluid Heat's story: a *complete* line of nationally-known home-heating units, and *two* big markets to sell them on. If you're a sales-minded dealer interested in that kind of set-up, send us your name and let's talk it over. Write, phone or wire: Fluid Heat Division, Anchor Post Fence Company, 6711 Eastern Ave., Baltimore 24, Maryland.

fluid heat
PRODUCTS

"World's Economy Champion"

A PRODUCT OF THE ANCHOR POST FENCE COMPANY, BALTIMORE, MD.
ESTABLISHED 1892

fueloil & oil heat

"easy to sell - tough to sell against"

IT WILL PAY YOU TO DECIDE THIS QUESTION NOW INSTEAD OF LATER

If you plan to sell oil-heating equipment after the war, here's something to consider. You probably will either sell the nationally distributed and nationally accepted line of H. C. Little oil-burning units, or else will have to sell in competition against them. Present H. C. Little dealers tell us the odds favor the H. C. Little franchise holder. Here's why.

The great majority of American home owners who want automatic oil heat have small homes and need a unit which burns less than three quarts of oil per hour. Since pressure type oil-burning equipment is not satisfactory in these small capacities, the demand will be for vaporizing type oil-burning units . . . AND

H. C. LITTLE LEADS THE FIELD WITH THE ONLY FULLY AUTOMATIC ELECTRIC IGNITION NATURAL DRAFT VAPORIZING TYPE BURNER Available in a complete line, including Conversion Burners, Floor Furnaces, Basement Furnaces, Utility Room Furnaces, Space Heaters, Water Heaters, Wall Furnaces, etc.

That is why, after the war, H. C. Little dealers will again have the competitive advantage — be selling what more than 75% of all home owners want — heating equipment designed especially for the typical 5- to 6-room house. These H. C. Little units: oil-burning floor furnaces, wall furnaces, console heaters, hot water heaters and small winter air conditioning furnaces, will be easy to sell, but mighty tough competition to sell against. Since you'll most likely be doing one or the other, why not investigate the idea thoroughly NOW.

Write for

a copy of "How to Get Real Profits in Post-war Heating," with our compliments.

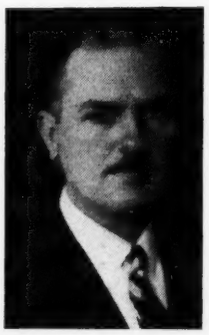
H. C. LITTLE Burner Co.
SAN RAFAEL, CALIF.
Branches in Principal Cities

WPB Construction Bureau

J. A. KRUG, CHAIRMAN OF THE WAR Production Board, announced on October 15 the establishment of a Construction Bureau to provide a centralized point of control over all matters pertaining to construction within WPB. The bureau will be headed by Arthur J. McComb, of Montclair, N. J., vice-president of Otis Elevator Co., and now serving in Government as director of WPB's Office of Industry Advisory Committees. The Construction Bureau will include the existing Building Materials Division, the Plumbing & Heating Division, the Construction Machinery Division and the bulk of the Facilities Bureau, which is being abolished. The new bureau, in addition to centrilizing construction control, also furnishes a mechanism through which construction work can be actively promoted whenever diminishing war requirements make that possible.

Clisby Joins Dongan

MR. K. I. CLISBY HAS BEEN appointed vice-president of the Dongan Electric Mfg. Co., as well as director. Mr. W. C. Clisby, Jr., has been appointed director of Dongan in charge of sales in the New York office.



K. I. Clisby

Direct factory branch offices have been established in Washington, in charge of J. C. Patterson, Jr., in Philadelphia, James Whiting, and in Boston, John X. Hogan. Allen D. Walter, formerly vice-president in charge of production of the Ohio Electric Mfg. Co. is to assist Lyle J. Hicks, who continues as president and G. J. Scherling as secretary and treasurer.

Dealers May Now Take Fueloil Contracts

THE PETROLEUM ADMINISTRATION for War on October 20 revoked Recommendation 37, which had prohibited any commitments for future fuel deliveries, so dealers may again accept oil contracts from customers.

When Victory Is Won

Our Plant

Will Be Ready

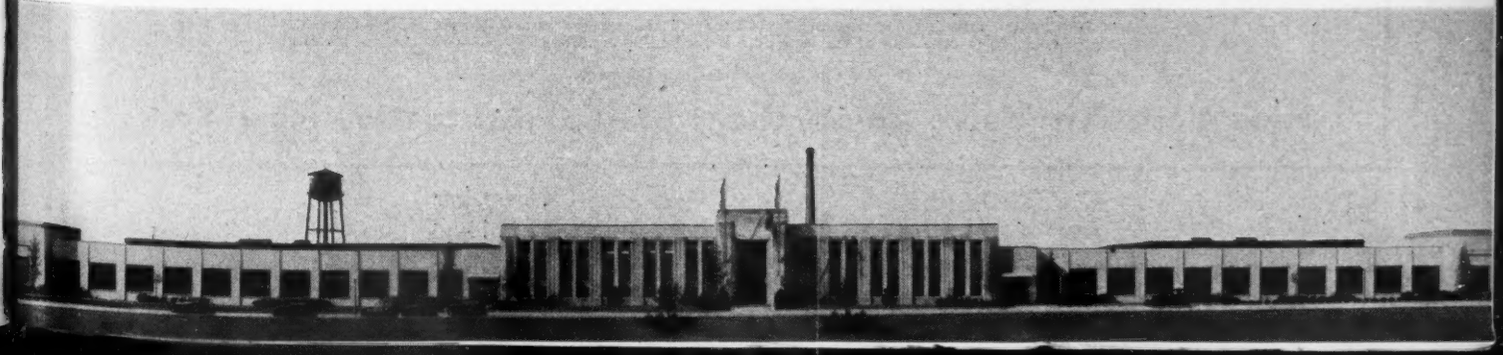
The great capacity of the Jefferson Electric plant, made good use of in producing vast quantities of transformers required for military uses,—will be ready to serve you promptly when Victory is won.

Having full control of the manufacture of all parts in our own plant,—and the ability to give you laboratory accuracy and precision in mass production, assure you uniform, high-quality Transformers to meet still better your post-war needs.

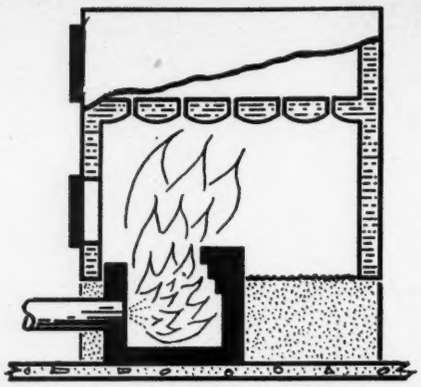
The latch string will be out; awaiting your visit. JEFFERSON ELECTRIC COMPANY, Bellwood (Suburb of Chicago), Illinois. *In Canada:* Canadian Jefferson Electric Co., 384 Pape Avenue, Toronto, Ontario.

JEFFERSON
ELECTRIC

IGNITION TRANSFORMERS



Reader's Problems



Diag. 1- Modern combustion chambers are built to this pattern .....

Diag. 2- Would this design be kinder to the boiler's heating surfaces?

Q. After having been away from the oil burner business for quite a few years, I am getting geared up to it again with an eye to post-war activities. I have been studying fireboxes, for they are the most important part of an oil burner installation because of the effect that good design can have on fuel costs.

Will you kindly answer a question on firebox design? The modern tendency in designing fireboxes for rectangular heating boilers is to crowd the fires in the fronts of the boilers. The heat from an intensely hot oil flame is concentrated, for example, on the first three or four sections of a typical six or seven section boiler. This is not kind to the boiler. It is not the way the heat from a coal fire on grates is applied to a boiler. Why not make the firebox the full length of the boiler, so that the flame does not concentrate such fierce radiant heat on the direct heating surfaces in the front of the boiler?

E.N.R., *Rochester, N. Y.*

A. As you point out, the modern practice in firebox design is to have the firebox short compared to the length of the boiler base, and this does give more heat to the direct heating surfaces at the front of the boiler than to those at the rear. Diag. 1 shows this. The big objection to using your idea, which would produce a firebox of the design shown in Diag. 2, is that poorer combustion and higher oil consumption would come of it. To produce rated output from a typical boiler of this type calls for approximately one gallon of oil to be fired per hour for every two square feet of grate area in the boiler. A modern firebox may have from 90 to 120 sq. in. of floor area for each gallon-per-

Nyavco
ORIFICE CONTROL

MAKERS OF AIR VALVES SINCE 1898

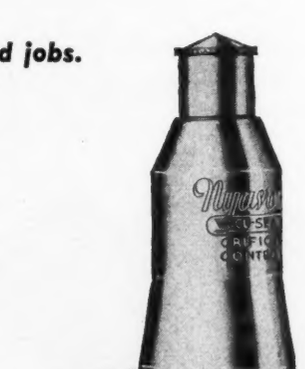
Designed particularly for Oil Burning or automatically fired jobs.

Air which fills each unheated radiator must be driven out by entering steam before heat is obtained. Using this air as a "cushion" and limiting or increasing its elimination time, the largest or smallest radiator, whether it be near or far from the boiler, can be heated at the same time, thus balancing the job.

The NYAVCO Orifice Control Air Valve, with its six variable venting ports, makes this possible. Has a definite metered disc, easily adjusted and then "locked in" thus tamper-proof. Adjustment does not depend on thread or needle valve principle.

NYAVCO vents three to five times faster than ordinary valves, because of unusually large vent port.

SHOWING INSIDE CONSTRUCTION



Disc shown in neck or control chamber of valve is set upon a hex "seat" which fit into hex-socket on bottom of disc, thus presenting one size each time disc is picked out and reset. As each resetting is made —beginning with .095—a reduction of the vent port is secured—thus .085—.075—.065—.055 and the smallest port of .045.

We can make immediate shipment.

New York Air Valve Corporation, 611-621 Broadway, New York

FUEL OIL CONSERVATION STARTS WITH BRODIE METERS

ON TRANSFERS & DELIVERIES

Regardless of whatever else may happen, this country faces a critical fuel shortage again this winter. Therefore it is more vitally important than ever to curtail fuel losses and waste, all along the line, starting with transfer and delivery operations. Consumers are being strongly urged to utilize every possible fuel-saving device available. In marketing operations Brodie Meters not only stop spillage and waste of precious fuel—they also prevent costly errors and conserve manpower, man hours and mileage. Likewise, by permitting deliveries to be more efficiently scheduled and thereby eliminating call-backs and back-hauls, Brodie Meters allow operators to make the most productive use of their time, equipment and product. Keep serving by conserving with Brodie Meters.

BRODIE METERS

PETROLEUM METERING EXCLUSIVELY

SINCE 1927

RALPH N. BRODIE CO., INC. 953 61st Street, Oakland 8, California, U.S.A. • Division Offices, Chrysler Bldg., New York 17
39 East Van Buren, Chicago 5 • 302 South Pearl Street, Dallas 1, Texas • 164 Jackson, Seattle 4, Washington • Los Angeles 11

Representatives and Stocks in All Principal Cities

fuel oil & oil heat

hour of the flame it fits. The firebox floor must be of length and width which match the shape of the oil flame, if combustion is to be excellent, and many gun burners tend to give flames perhaps one and one-half times as long as they are wide. Trying to obtain a flame shape greatly different from this invites trouble and high oil consumption. Not many pressure burners can give, for example, flames that are efficient and three times as long as they are wide.

We recommend that you study up further on firebox design, and on combustion testing to determine the merits of different fireboxes. You will find that the modern practice of building fireboxes according to the pattern of Diag. 1 gives high CO_2 readings with no smoke, and low stack temperatures. Using this design does not harm the boilers, but works them at their maximum efficiencies and produces lowest fuel bills.

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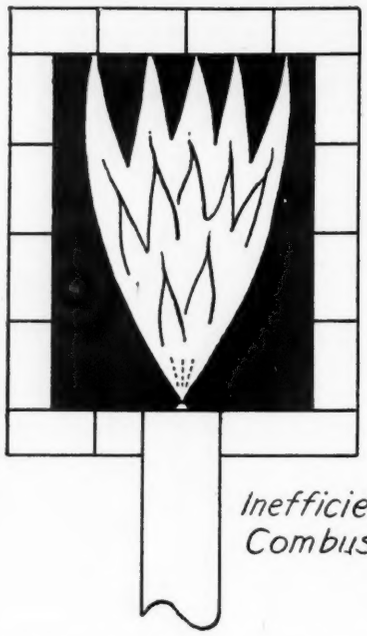
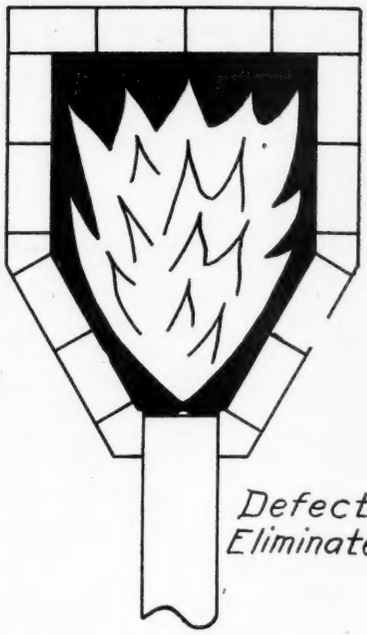




Q. The accompanying sketch shows the trouble we are having with the flame striking the back wall of a firebox. The firebox is 20" wide and 24" long, and as large as can be built in the base of the steel boiler. It must be fired 5.0 gph to carry the load. No matter which nozzle we install, and we have tried more than a dozen different new nozzles during the past two years, oil strikes the back wall of the combustion chamber and builds carbon, while the front part of the firebox stays comparatively cool. The combustion is so poor that we have to keep the air damper on the burner wide open, else the boiler fills up with soot within a month and the chimney gives heavy smoke. So adjusted, the job gives 4.0% CO_2 and 925° stack temperature. We would like to lick the

For Positive Oil-burner Ignition

with Little or No Radio Interference

General Electric ignition transformers provide an *unfailing* high-voltage arc—even igniting oil as cold as minus 10 C when the line voltage is only 70 per cent of normal. They also deliver ample current to overcome such conditions as cold spark points, and oil film on these points.

Our Class E transformers (electrostatically balanced) are virtually radio-interference proof. The mid-point of the high-voltage winding is grounded, and a grounded electrostatic shield is incorporated between the high- and the low-voltage windings.

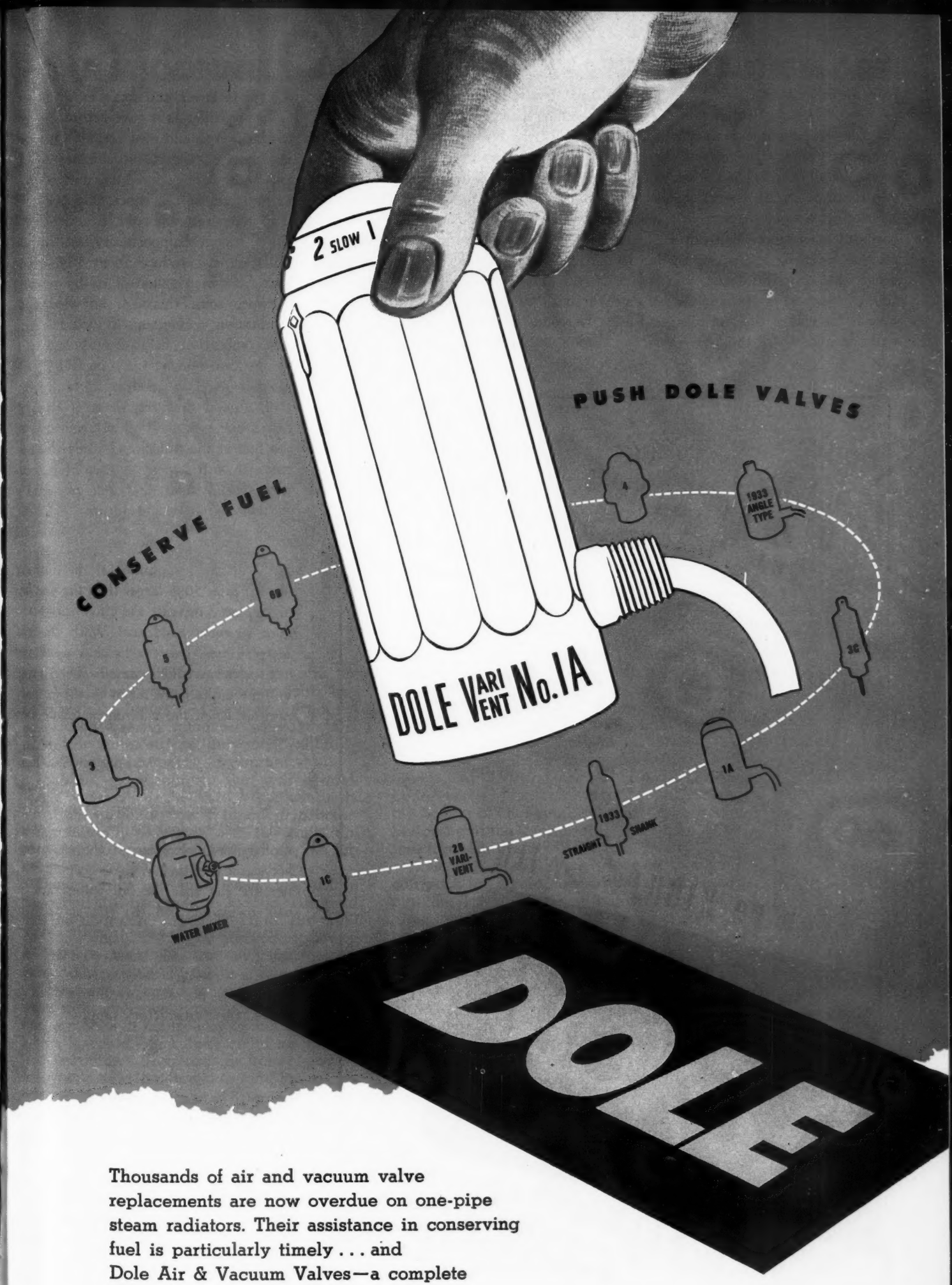
Where burner design requires a transformer with an ungrounded or end-grounded secondary, we recommend our Class F transformers in combination with Pyranol capacitors or G-E filtering devices.

Ask your nearest office for Bulletins GEA-912D and GEA-2587. We will also be glad to help you get replacement parts to keep your customers' oil burners at top operating efficiency. *General Electric Company, Schenectady, N. Y.*

IGNITION TRANSFORMERS

GENERAL ELECTRIC

403-57-5205



Thousands of air and vacuum valve replacements are now overdue on one-pipe steam radiators. Their assistance in conserving fuel is particularly timely . . . and Dole Air & Vacuum Valves—a complete line—are now available.

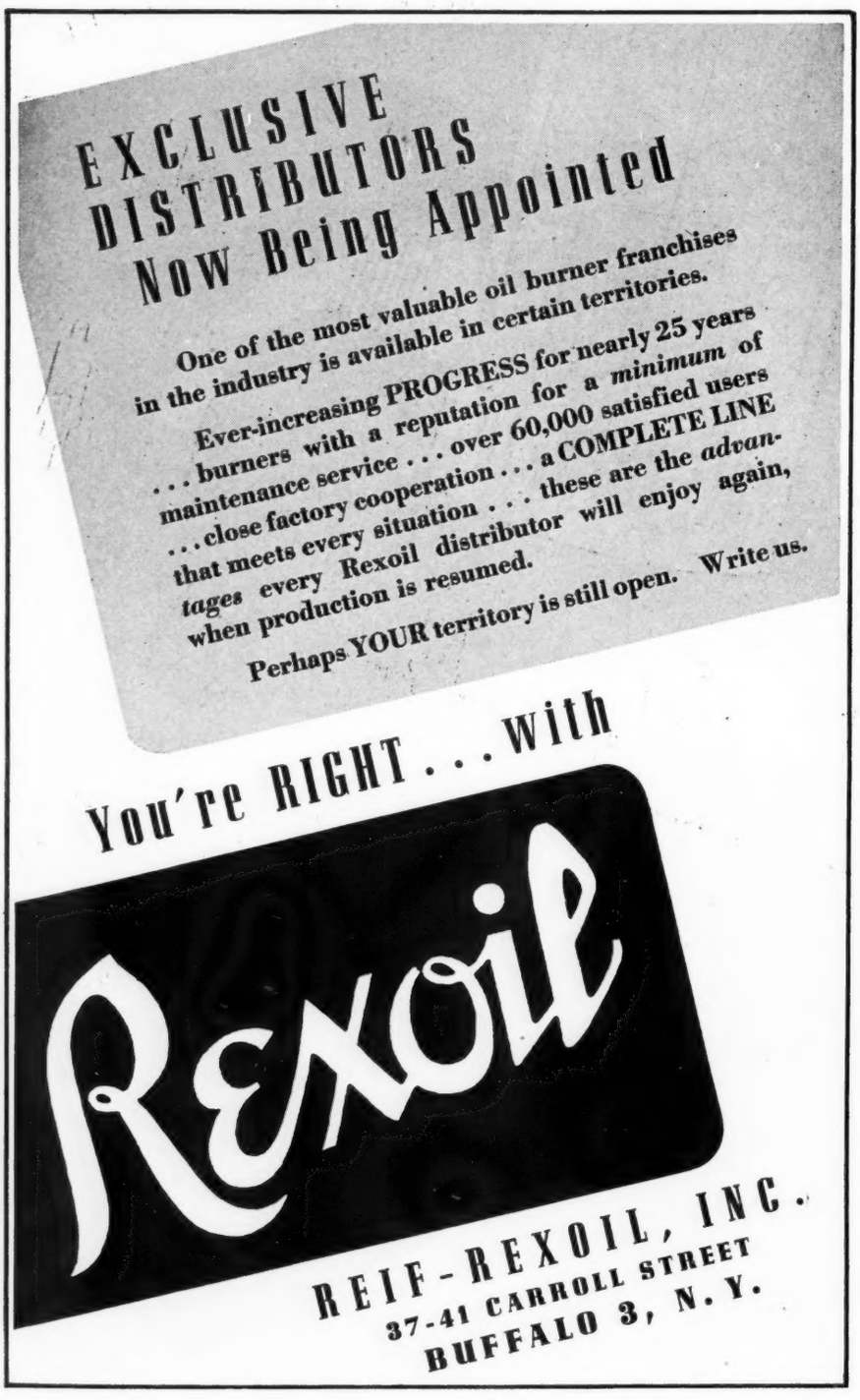
THE DOLE VALVE COMPANY • 1901-1941 Carroll Avenue, Chicago 12, Illinois • *Representatives in Principal Cities*

trouble so that the owner gets more heat from the oil he burns.

S.N.F., *Washington, D. C.*

A. Your experiences with this burner prove once more that without changing the air-handling parts at the ends of the gun tubes of certain burner models you can not get a flame shape to fit a certain combustion chamber. You can solve the problem by changing the way the burner delivers the air to the firebox. You may be able to remove the air-handling vane or cone at the end of the gun tube, and install one suitable for the firebox. Or you may have to cut off the end of the gun tube to fit the burner with the needed air-handling parts. Write to the manufacturer of the burner and to several well-known manufacturers of nozzles and pressure burner specialties to get information on new air-handling parts to install at the end of the gun tube.

The drawing marked Defects Eliminated shows a firebox design you may want to use for more even heating of the firebox. With the burner shortcomings overcome and the new firebox (of the same width and length as the old), you will be able to use a lower firing rate, say 4.0 gph or lower, and obtain as much heat from the boiler as it gave before. Proper combustion should give you a CO_2 reading above 10% with no chimney smoke and without objectional amounts of soot in the flues of the boiler, and the final stack temperature should be under 800°. There is a real opportunity, on this installation, to produce about 50% more heat from each gallon of oil by putting to work some thorough knowledge of combustion engineering. If you install a new combustion chamber, make sure it is of modern design and material. Take pains to regulate the draft carefully; install a good draft regulator if the job hasn't one now; seal every air leak you can find in the boiler; and study the flue passages with a view to equipping them with special baffles that will give you a rockbottom stack temperature.


EXCLUSIVE
DISTRIBUTORS
Now Being Appointed
One of the most valuable oil burner franchises in the industry is available in certain territories.
Ever-increasing PROGRESS for nearly 25 years . . . burners with a reputation for a minimum of maintenance service . . . over 60,000 satisfied users . . . close factory cooperation . . . a COMPLETE LINE that meets every situation . . . these are the advantages every Rexoil distributor will enjoy again, when production is resumed.
Perhaps YOUR territory is still open. Write us.
You're RIGHT . . . With
REXOIL
REIF-REXOIL, INC.
37-41 CARROLL STREET
BUFFALO 3, N. Y.

◈

Q. Will the installation of an indirect water heater 50% larger than the one being replaced increase the oil consumption in a six-room residence? With the old water heater, once or twice a week the hot water ran cold, generally when three or four baths were taken the same evening or when the washing machine was used.

G.S.R., *Port Washington, N. Y.*

For all practical purposes, the answer is No. Presumably, about as much hot water will be used in the house as was used before, excepting at the times the hot water used to run cold. To play safe, be sure (a) that the hot water tank is well insulated, and (b) that a valve is installed in the flow line from the indirect water heater to the boiler, and that this valve is adjusted, if necessary, so that the water does not run any hotter than is needed for a satisfactory supply.

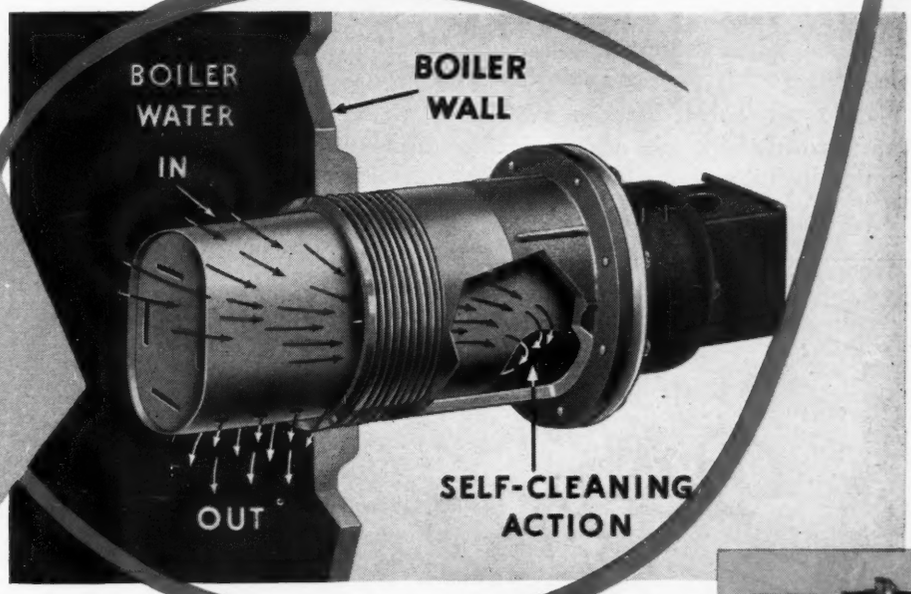
◈

Q. A two-pipe steam plant installed 20 years ago heats a four-story office building which takes up half a city block and a garage which houses a fleet of eight trucks. The room thermostat which starts and stops the oil burner is in the office building, and this building can be heated properly to any desired temperature. But each time the burner starts, it stops before enough steam to heat the garage flows through the line to the unit heaters in the

NOW McDONNELL BUILT-IN LOW WATER CUT-OFFS ARE

Self-Cleaning

—a feature that solves the toughest of all problems



OF all types of low water cut-offs the "built-ins" have the toughest job. They go in *with* the boiler . . . become a part *of* the boiler . . . get no attention whatever. But when low water strikes, they must faithfully do their job of stopping the burner.

To build a mechanism that will always "click" when it's expected to is tough enough. But when the float has to function in boiler water that *may* be loaded with anything from core sand to speculative real estate, the job becomes *doubly* tough.

Theoretically, of course, it isn't the fault of the cut-off if it becomes so loaded with mud that the float can't move. The mud shouldn't be there, and if all instructions are followed it won't be there. But the practical fact remains that it often IS there.

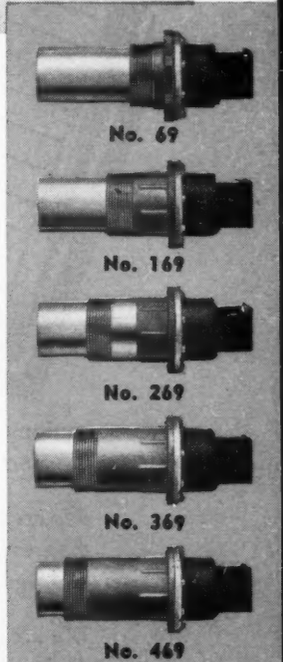
Therefore, to make a cut-off that would work right even when *neglected*, we had to find a means of controlling a condition over which it would seem there could *be no control*. That didn't discourage us from pounding away at a solution, however, and our efforts were rewarded.

When the answer was found it was as simple as it was effective. We found that we could use the circulation of the boiler water to keep the space around the float cleaned out. The illustration above diagrams the action. By means of a specially designed opening at the head end of the float shield, boiler water circulation is directed through the bottom of the shield, keeping the sylphon bellows and the interior of the shield entirely free from sand and silt.

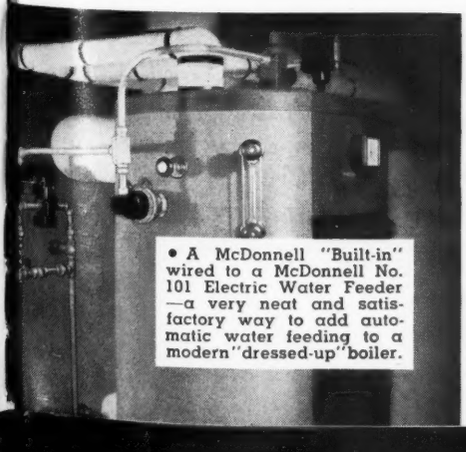
How well does it work? So well that you can pack the shield tight with wet core sand until the float can't budge, but within an hour after the boiler is operating the cut-off will be functioning perfectly.

Here is the toughest of all problems solved. And this self-cleaning action is added to the long list of features that set McDonnell Built-in Low Water Cut-offs so distinctly apart.

More than ever it is essential that you specify McDonnell Built-in Low Water Cut-offs with modern jacketed boilers—to give the owner a cut-off that will ALWAYS WORK RIGHT!



• There is a McDonnell "Built-in" engineered to the characteristics of every modern heating boiler—a few (all with the new self-cleaning feature) are illustrated above.



• A McDonnell "Built-in" wired to a McDonnell No. 101 Electric Water Feeder —a very neat and satisfactory way to add automatic water feeding to a modern "dressed-up" boiler.

McDONNELL & MILLER, 1310 WRIGLEY BLDG., CHICAGO

McDONNELL

BOILER FEEDERS—LOW WATER CUT-OFFS

Doing One Thing Well

REG. U. S. PAT. OFF.

Your Jobber Stocks Them

Copyright 1944, McDonnell & Miller

garage. This steam line is 200 ft. long. It is a 3" line. When on a cold day we turn on the unit heater motors in an effort to heat the garage, they blow cold air most of the day and give a trace of heat for only a few minutes each time the oil burner runs. The boiler and oil burner are oversize for the total load on them. What is the most inexpensive way to provide more heat, and halfway satisfactory heat, for the garage?

D.O.M., *Brooklyn, N. Y.*

A. The equipment you describe invites cutting the oil consumption and providing better heat at the same time by installing a modern control system. Motorized steam valves, one for the garage and at least one for the office building, may be needed to provide zoned heat for the two buildings and to permit each to obtain steam when heat is needed. Large building heat controls probably should be used to start and stop the flow of steam, instead of the simple room thermostat system you describe, which is good enough for a small residence but not able to serve the requirements of the large plant you describe. We suggest that you ask one or two representatives of heat control manufacturers to study the problem for you and to recommend suitable controls.

In the meanwhile, to give better heat for the garage at minimum expense, we suggest you do the following.

1. For each unit heater motor in the garage, install at the unit heater either a suitable steam temperature control or pressure control which will turn on the unit heater motor when there is steam in the element of the unit heater, and turn off the motor when the heater has no steam.

2. Make sure that the steam line to the garage is insulated exceptionally well.

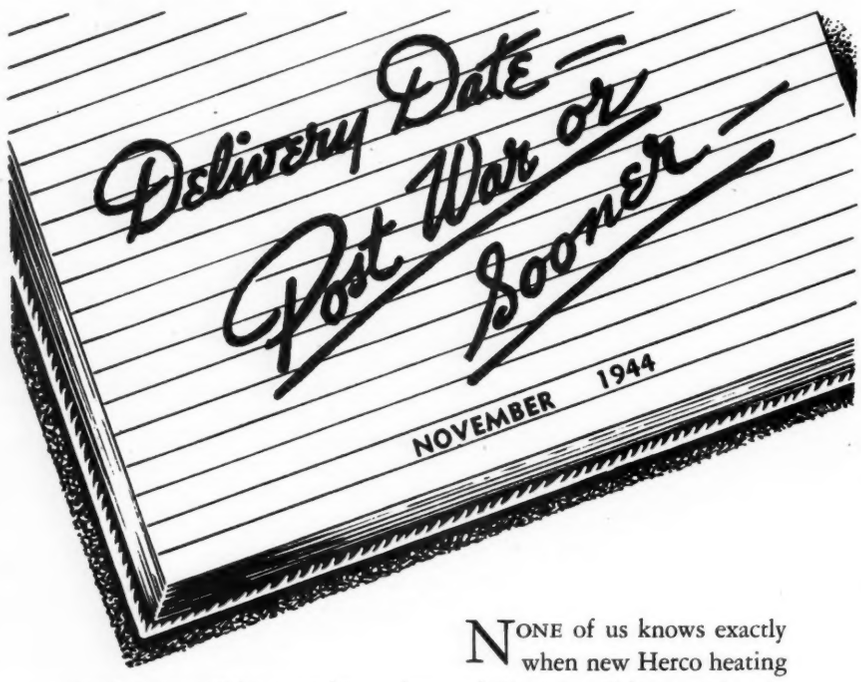
3. You may have to adjust the heating plant to cause more steam to go to the garage, and less steam to go to the heating mains in the office building, each time the burner runs. If there is a valve in the line from the boiler to the heating mains of the office building, opening this valve one-third or one-half may do the trick; try adjusting the valve to arrive at a better balance of heat between the office building and the garage. If there is no such valve, you might install one. Far better than using such a valve, in any event, would be the installation of a proper size orifice in the radiator feed valve of every radiator in the office building. Obtain information on the installation of such orifices from the large manufacturers of specialties for two-pipe steam systems. The manufacturer of the orifices you decide to use should be able to give you detailed engineering information on the size of orifice to use for each of the radiators.

◈

Q. Can crankcase drainings from automobiles, trucks, and tractors, be filtered and purified in any way to make them fit for use in range burners or oil burning parlor stoves?

F.H.W., *Brattleboro, Vt.*

A. No—emphatically! If you have large quantities of such drainings on hand and are decided to try to use them in oil burners despite the frequently-given warning that this is hazardous unless very special precautions are taken, check on the possibilities of burning the drainings in large pressure burners (firing more than five gallons-per-hour), low-pressure atomizing burners, horizontal rotary cup burners, and commercial and industrial burners which normally use No. 5 or 6 oil.



NONE of us knows exactly when new Herco heating equipment will be available . . . but we believe it will be sometime in the "sooner than post-war" period.

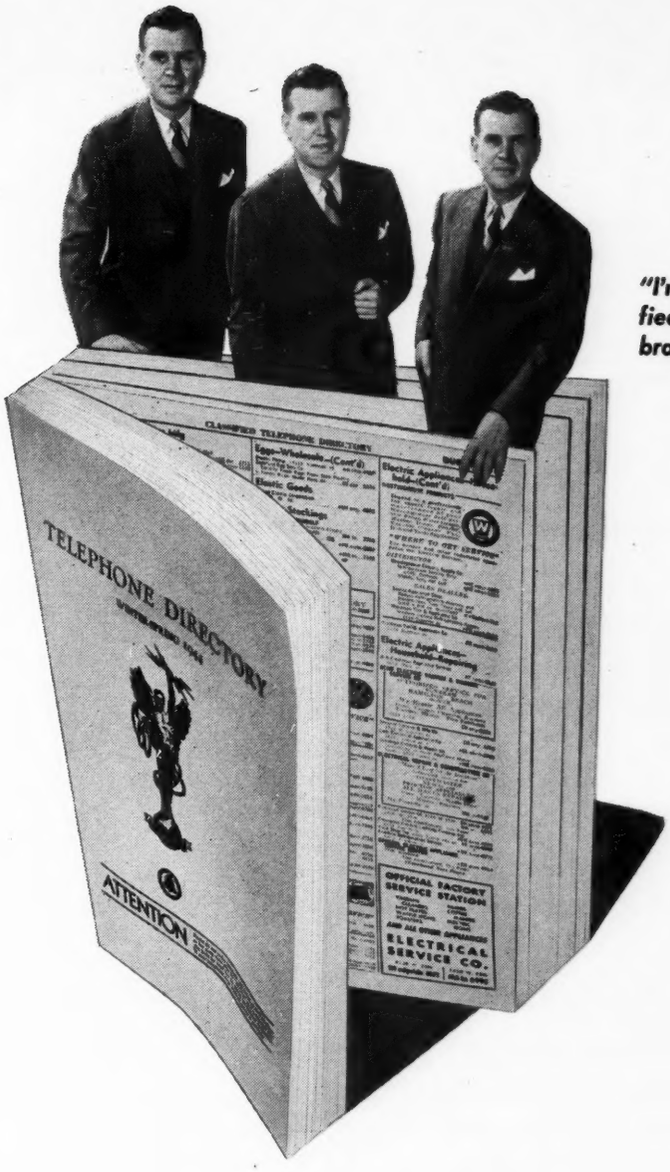
We are ready . . . with plans for better, even more efficient Hercos than ever before. While producing for war, we are awaiting the GO-signal on peacetime products.

We are also ready with plans for efficient distribution of new Herco equipment. Many dealers have already endorsed the Herco plan for post-war dealerships. If *you* have not yet asked for details of this important dealership plan, *write today*. There is no obligation.

HERCO OIL BURNER CORPORATION, Lancaster, Pa.

Service in Wartime Sales in Peacetime

HERCO
The Oil-Thrifty
OIL BURNER



"I'm going in the Classified under the different brands I carry . . .

"So post-war buyers will know the brands I sell"

Said the local merchant, looking toward post-war sales: "I intend to make it easy for people in my community to know me as an authorized dealer of the brands I stock.

"So I'm arranging now to list my business under the trade marks of these brands in the Classified section of my local telephone book."

Identification of your business in the Classified with the brands you sell will attract your share of sales and service stimulated by the manufacturers' advertising.

To "Look it up in the Classified" is a universal habit when people intend to buy, or want service. That's because people find the book so helpful and convenient—it is available everywhere—in their homes, offices and at public telephone booths.

Why not include the Classified in your post-war plans? Just call the Business Office of the telephone company and ask for a Directory Representative.

BELL SYSTEM
AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES

fueloil & oil heat

Gas Installations Distress Oilheating Men

SEVERAL THOUSAND GAS HOME HEATING installations are currently being made in various parts of the country, with approval of Washington, and the practice is stirring righteous wrath in the breasts of oilburner and fueloil men. As one after another gas utility has certified to the Power Division of WPB that its war industry demand has slackened, they are being given permission to take up the slack with home heating. In natural gas areas, WPB feels that using this fuel saves scarce oil and coal. In manufactured gas regions, steam sizes of coal and residual fueloil are principally used in making the gas, and these are said to be in plentiful supply, while larger coal sizes and distillate fueloil are scarce and gas relieves these demands.

Oilheating men feel that unrationed gas already had too much of a break in the war period and that now it is getting a strong pre-postwar jump on its competition. The only ray of light is the fact that gas equipment (other than a few conversion burners) is not being manufactured and present stocks are thinning out quite rapidly.

DONGAN TRANSFORMERS

You Need More Than Plans

Postwar plans are necessary and desirable but you must do something about them.

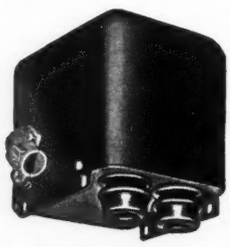
Start Designing Now

Manufacturers should begin immediately to specify the equipment they will need—and find sources of supply. Oilburner manufacturers who arrange now for the transformers they will need for their postwar products will have a distinct advantage over those who wait.

Order Today

We are now booking orders for postwar delivery. Send us your specifications for a quotation and settle your problem of transformer supply.

Voltages from 5000 to 15,000. A variety of sizes and mountings. Special types built to specifications.



WRITE FOR LITERATURE.

Dongan Electric Manufacturing Co.

2981 FRANKLIN DETROIT 7, MICH.

"The Dongan Line Since 1909."

WPB Readies Machinery for Burner Production

MANUFACTURERS OF DOMESTIC oilburners are being advised to get in touch with their local War Production Board field offices to get help in filing for permission to produce their fourth quarter quotas. Contact with the field offices is the first step in filing for approval to produce any part of the 30,000 quota of domestic oilburners to the end of the year.

Application is to be made to the local WPB field office by letter in which the manufacturer states the number of units he proposes to make during the quarter. If the manufacturer employs more than 50 production workers on the Pacific Coast, or more than 100 workers in any other part of the country, he must also file WPB Form 3820 to reveal his manpower situation. Help will be given at the local boards in framing the letter of application, and in filling out the manpower form.

If a manufacturer needs controlled materials to build his quota of burners, he also must file a CMP 4-B application with his letter. Here again help will be available at the nearest WPB field office. After the application has been approved by the local WPB office, it will be sent to Washington for final approval, after which the Plumbing and Heating Division will issue authorization on Form GA-1850.

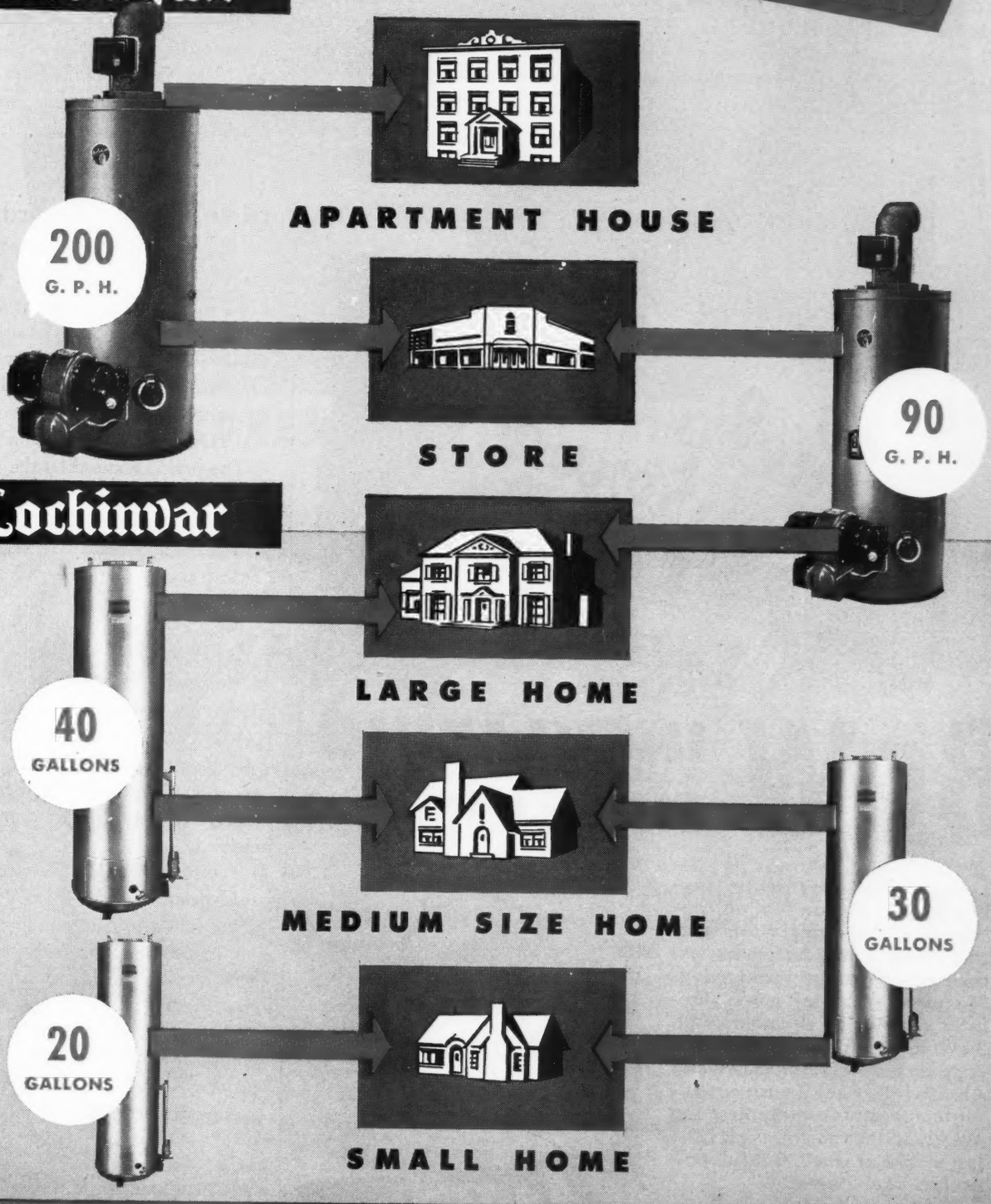
Manufacturers are urged to visit their nearest WPB field office before attempting to write their letters of application or fill out the manpower or CMP forms.

Burner production under PR 25 (spot authorization) or to fill orders on approved Forms 1319 will not be counted in the fourth quarter quota. It also is expected that allowable quotas may be carried over into succeeding quarters if a manufacturer is not able to finish production of his quota before the end of the year. After November 12, 1944, no more Forms WPB-1319 will be approved, so manufacturers will gradually become dependent on production authorized on Form GA-1850 issued from Washington.

Production quotas given to manufac

Fills EVERY NEED FOR HOT WATER
(OIL FIRED)

Michigan



MICHIGAN TANK & FURNACE CORP.
14101 Prairie • Detroit 4, Mich.

turers who cannot qualify for oilburner manufacture for manpower or other reasons, or who do not wish to produce burners in the fourth quarter, will be reserved for those who can produce more than the tentative quota assigned them, and for any new manufacturers who may wish to enter the field.

Order L-74 has been amended to implement the authorization of material. Though no rating is assigned by the order, it is understood that AA-3 will be given all manufacturers. Those with higher ratings for war materials probably can extend the higher ratings to get some material.

Sale and installation of these oil burners to an ultimate consumer to replace an oil burner that is worn out, damaged beyond practical repair or destroyed, are freed from restrictions under the newly-amended order. However, sales for new installations must be approved by either the Petroleum Administration for War or the Office of Price Administration, depending on which agency has jurisdiction over the use of fuel oil for the installation.

No control over distribution of oil burners from the manufacturer's level will be maintained, WPB Plumbing and Heating Division officials explained. However, each manufacturer will be expected to distribute his production through his normal distribution channels, taking into consideration shipments to areas during 1941, migration of workers to certain areas and such other factors as will provide equitable distribution to meet essential needs. WPB also said it reserves the right to direct the distribution of specified amounts from any manufacturer's production to meet emergencies.

B & W INSULATING FIREBRICK

In this fuel emergency, savings up to 10% on fuel oil consumption are surely worth getting. Help your customers get such economies by recommending replacement of heavy firebrick combustion chambers with B&W K-20 Insulating Firebrick. Easy to install. Light in weight. Absorb little heat. Reach operating temperature rapidly. Respond quickly to thermostat. High CO_2, less smoke or smell. Get full particulars now—write:

ARMY E NAVY

THE BABCOCK & WILCOX COMPANY
Refractories Division
85 LIBERTY ST., NEW YORK 6, N. Y. R-184

BABCOCK & WILCOX

High Payment Record On FHA Improvement Loans

ONLY 1.8 PERCENT OF THE AMOUNT of FHA—insured property repair loans outstanding were shown to be delinquent by the 1944 call report of the private lending institutions making such loans, Commissioner Abner H. Ferguson of the Federal Housing Administration announced.

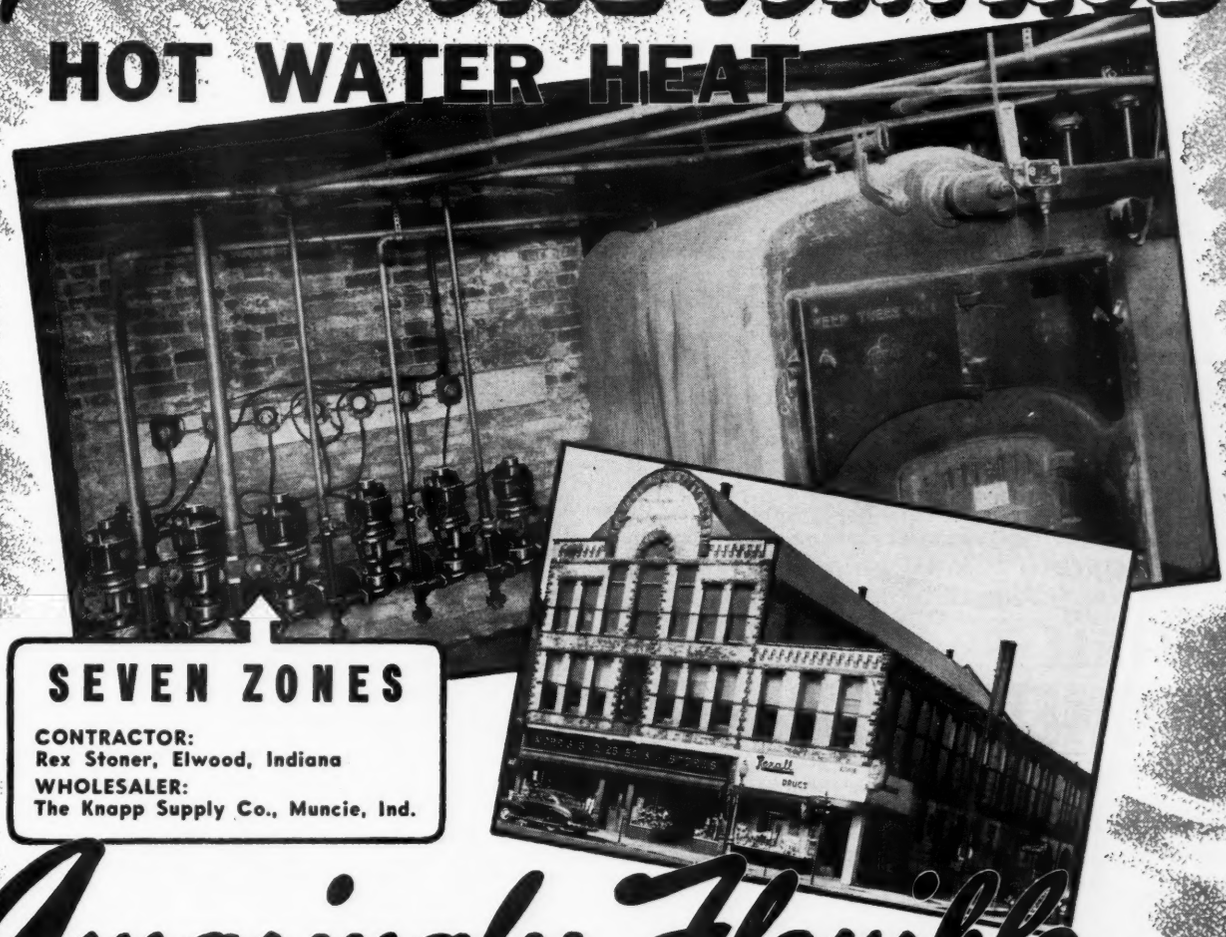
The period covered by the report from the participating institutions is from July 1, 1939, when an insurance premium charge of three-fourths of one percent on Title I repair loans became effective, to May 1, 1944.

Of 2,450,000 Title I loans amounting to $945,000,000 reported for insurance during that period, 82.8 percent of the dollar amount has been paid off completely. Loans outstanding as of May 1 numbered 630,000, with an unpaid balance of $162,400,000 representing 17.2 percent of the total face amount of loans insured.

Fewer than 10,800 loans having an unpaid balance of $2,971,000 were delinquent 90 days or more, representing only 1.7 percent of the number and 1.8 percent of the unpaid balance of all loans outstanding. It is probable, Mr. Ferguson said, that many of these delinquent accounts represent borrowers in the military service who have had to adjust their payment schedules.

THE BLACKMER PUMP COMPANY of Grand Rapids, Michigan has issued a new bulletin—"Pumps for the Petroleum Industry"—which is available to users of bulk plant pumps, truck pumps or hand pumps.

Thrush ZONE CONTROL
HOT WATER HEAT

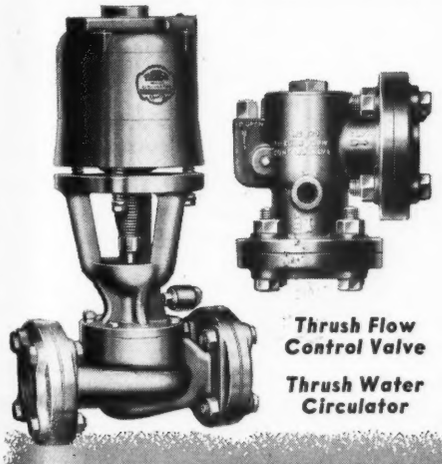


SEVEN ZONES

CONTRACTOR:
Rex Stoner, Elwood, Indiana
WHOLESALER:
The Knapp Supply Co., Muncie, Ind.

Amazingly Flexible

HERE is an ideal example of Thrush Zone Control applied to the heating system of a combined business and fraternal or apartment building. The Masonic Temple at Elwood, Indiana, shown here, has seven zones, each of which is entirely independent of the others. The importance of this arrangement is obvious when you consider that the drug store is open more hours than the variety store or barber shop, while the kitchen, dining room and lodge rooms on the second floor are used only periodically. Each receives just the amount of heat it requires without overheating. The fuel saved is surprising. When compared with the cost of central city heating formerly used, the new Thrush installation is saving at least half the annual fuel bill. Owners of similar buildings, including apartments and larger residences, will thank you for telling them about Thrush Zone Control. Get all the facts now from your wholesaler or write Dept. C-11.



Thrush Flow Control Valve

Thrush Water Circulator

H. A. THRUSH & COMPANY . . . PERU, INDIANA

PAW Running Below Budget

REDUCTION IN PERSONNEL and other economies in operation have enabled the Petroleum Administration for War to operate substantially below its budget during the first three months of the fiscal year, Deputy Petroleum Administrator Ralph K. Davies announced.

On the basis of the present level of operation, PAW will turn back approximately $700,000 of its appropriation to the Treasury at the end of the fiscal year. Such a refund would represent the second substantial saving on current operations as PAW last May voluntarily reduced its budget request approximately $500,000.

Operating on an annual budget of $6,000,000, PAW expenditures for the first three months were $1,317,213, or $182,787 under budget.

U. S. Department of Labor Fueloil Prices August

FIELD INVESTIGATORS for the Department of Labor bi-monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken Aug. 15: (cents per gallon)

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	10.60	10.45	9.00	9.00
Bridgeport	10.30	..	9.00	9.00
Fall River	10.85	..	9.70	..
Manchester	11.10	..	9.70	..
New Haven	10.70	..	9.00	..
Portland, Me.	10.20	10.20	9.00	..
Providence	10.30	10.22	9.00	..
Baltimore	..	9.71	9.00	..
Buffalo	10.90	10.90	10.00	10.00
Newark	..	..	9.00	9.00
New York	..	..	9.09	9.09
Philadelphia	..	9.90	8.93	8.91
Rochester	11.00	11.00	9.70	9.70
Washington	..	10.30	9.40	..
Chicago	8.62	7.62	7.76	7.70
Cleveland	..	8.55	8.55	8.03
Detroit	..	8.45	7.93	7.42
Des Moines	..	8.36	7.75	7.75
Milwaukee	8.50	8.50	8.00	8.00
Minneapolis	8.51	8.23	8.12	8.12
Omaha	..	8.10	7.60	7.60
St. Louis	8.47	7.81	7.55	7.55
St. Paul	8.47	8.23	8.13	8.14
New Orleans	..	8.72	7.21	7.21
Norfolk	..	10.00	8.80	8.80
Richmond	..	10.30	9.00	9.00
Denver	..	8.16	7.14	..
Portland, Ore.	..	7.30	6.30	..
Seattle	..	7.78	6.75	..

York Corp. Surveys Employees in Service

A SURVEY BY THE YORK CORP., York, Pa., shows the G. I.'s thinking on his returning to his postwar job. About 40 per cent want better jobs using their army skills, while others expect additional training while working to qualify for higher positions. Seventy-five per cent of returning veterans are anxious to see women leave their jobs and return to their homes.

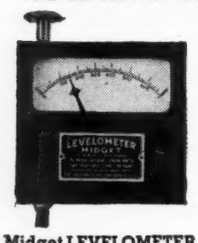
York expects 80 per cent of the company's typical U. S. industrial workers now in the armed services to return to the York Corp. Forty per cent of those asked want to make use of their knowledge gained in the Service at better jobs upon their return, and those remaining do not want to return to their old jobs, but rather want to be trained by the company for new ones.

More than three-fourths of the men and women questioned are optimistic about postwar employment, but half of them mentioned women in industry as a major postwar problem. Although appreciative of the job women have done for

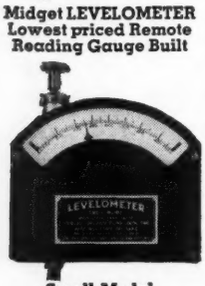
WITH OIL CONSERVATION MORE VITAL THAN EVER, Its Accurate Check-Up IS IMPORTANT—

INSTALL LEVELOMETER Tank Gauges

"THEY'RE ALWAYS DEPENDABLE"



Midget LEVELOMETER Lowest priced Remote Reading Gauge Built



Small Model LEVELOMETER 6"x6" case

Large Model LEVELOMETER 12"x12" case

A LEVELOMETER gauge on an oil tank installation eliminates guesswork—it insures accurate readings at all times.

Convenient, remote reading:—LEVELOMETER dial may be located at any reasonable point from tank and—large graduations and numerals make it easy to read.

LEVELOMETER tank gauges, approved by Underwriters' Laboratories, operate on an exclusive adaptation of the hydrostatic principle. No liquid is used in indicator to be affected by temperature changes, to evaporate, stain glass or to be blown out due to excessive pumping.

Get complete details regarding LEVELOMETER tank gauges—the Remote Reading gauges that insure accurate—trouble free check-up.

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

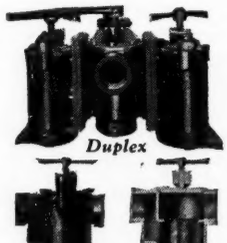
Proven by PERFORMANCE—

KRAISSL

Filters • Strainers • Pumps for FUEL OIL

Intelligent engineering is only the starting point. Consistent on-the-job performance over many years provides practical endorsement of KRAISSL design and manufacture.

Class 72 Strainers and Filters



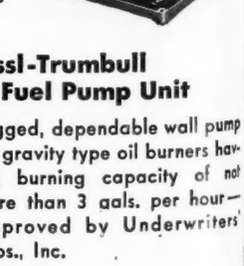
Duplex

Single

Single and Duplex types for suction or discharge service—any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Kraissl-Trumbull No. 522 Fuel Pump Unit

Rugged, dependable wall pump for gravity type oil burners having burning capacity of not more than 3 gals. per hour—Approved by Underwriters' Labs., Inc.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

THE KRAISSL COMPANY INCORPORATED
295 Williams Ave., Hackensack, N. J.

the war effort, the G. I.'s want women industrial workers to leave their jobs and return to their homes.

York is not waiting for the moment when they will return before doing anything about this problem, and by quizzing former employees all over the world, they are preparing to handle the situation as efficiently as possible when the time comes. The problem is lessened somewhat by the fact that the returning veterans will be able to grasp training quickly. The average veteran can learn any new skill in six weeks just as he learned his army or navy work.

York realizes that by putting each veteran into a job he is best fitted for with a chance for better income and the kind of opportunity his army initiative has earned, they are not only doing their patriotic duty, but this policy in the end will be of great value to the Company.

Johns Manville Discussed Fireboxes On Radio

IN THE FIVE MINUTE COMMERCIAL period attached to its regular evening news broadcast on the Columbia network October 19, Johns Manville, New York, explained in detail the advantages to homeowners in having scientifically designed combustion chambers in their oilheating plants. Specifically, the script outlined the merits of quick heating refractories such as JM's new insulating firebrick as contrasted to the fuel-wasting time lag when conventional firebrick is employed in building the firebox.

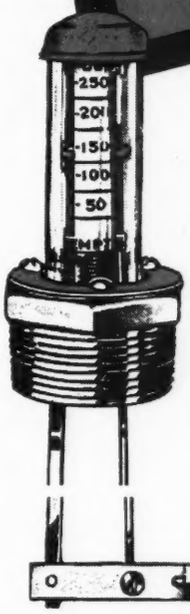
Delavan Gets License For Balloffet Nozzles

A LICENSE TO MANUFACTURE and sell oilburner nozzles under the patents of the Balloffet Dies and Nozzle Company has been granted to the Delavan Manufacturing Co., Des Moines, according to L. Chambre, Balloffet vice-president. The Delavan company has been Middlewestern distributor for the line for seven years.

According to the terms of the licensing agreement, both companies will manufacture and sell nationally; Balloffet from its Guttenberg, N. J., plant, and Delavan from Des Moines. Mr. Chambre points out that the present demand for the noz-

MEL Adjustable* FUEL-OIL GAUGES

for Easy Accurate Reading at All Times



LET US HELP YOU DETERMINE YOUR POST-WAR GAUGE REQUIREMENTS NOW!

By determining your post-war requirements for fuel-oil gauges at the earliest possible time you may expedite your future deliveries. Don't let post-war production problems force you to accept inferior gauges when a letter, written now, will insure your future deliveries of MEL-GAUGES.

• COMPARE THESE FEATURES •

All MEL-GAUGES are *adjustable** for easy installation and accurate readings at all times . . .

Features of Model C . . . GAUGE CAP—Heavy steel stamping. Attractively enamelled.

DIAL — *Adjustable* cellulose acitate tubing. *Unbreakable.*

FLOAT SUPPORTING ARM — Cold rolled steel. Cadmium plated.

*Patented

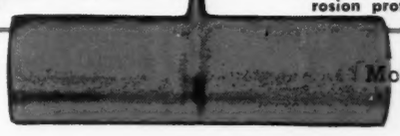
RODS — Bessemer steel. Heavily tin coated.

INDICATING KNOB — *Adjustable.* Red fiber. Easily seen.

BODY — Transparent cellulose acitate tubing. *Unbreakable.*

BASE BUSHING — Cast iron. Accurately tapered threads.

ROTATING FLOAT — All metal. Corrosion protected.



Model C

Model A1

MEL-GAUGES may be easily installed and adjusted to read accurately on a "FULL" mark on all makes of fuel-oil tanks of capacities from 265 to 290 gals.

TO INSTALL—1. Remove screws in gauge bushing. 2. Insert gauge in tank opposite filler pipe with float pointing to long end of tank. 3. Screw gauge bushing in tank. 4. Tighten gauge bushing with screws.

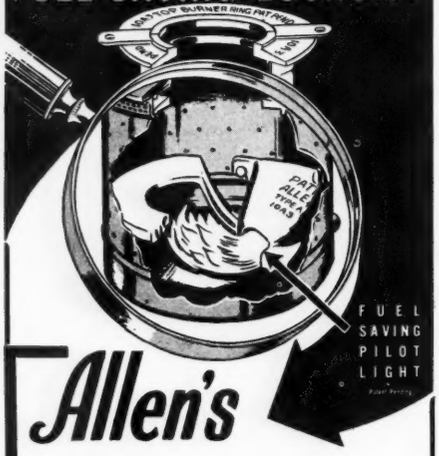
TO ADJUST—1. Unscrew red cap on Model C gauge. Unscrew knurled nut on Model A1 gauge. 2. Remove plastic top. 3. Lift indicator rod until float hits top inside of tank. 4. Adjust indicating knob in line with the "full" mark on dial.

Write for this Illustrated, File Sized, Folder NOW!

Mel-Gauge COMPANY

EAST HAVEN, CONNECTICUT

REVOLUTIONARY
FUEL-SAVING ECONOMY



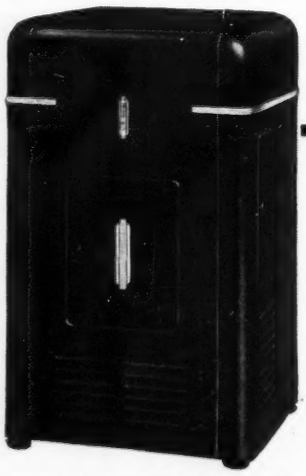
Allen's

LoPilot OIL BURNING
Parlor Furnace

People today are "fuel-saving conscious" as never before. That's why they *go* for ALLEN'S fuel-saving LoPilot Oil Burner in a big way . . . why this revolutionary Burner is proving itself to be one of the quickest, easiest-selling profit makers ever known to the heating industry.

The LoPilot Burner owes its amazing fuel-saving economy to a specially designed pilot light which permits *fast low-pilot-to-high-fire-burner* operation in mild or changing weather. Fuel wastage in overheating is greatly reduced . . . "stand by" fuel consumption is drastically cut! The pilot light in the 10-inch Burner uses less than 1/33 of a gallon of oil per hour, operating on low pilot.

It will pay you to investigate this sensational new ALLEN Burner. Write for details.



Allen's Oil Burning Parlor Furnace
Duotone Baked Enamel.
Model 4110.

Allen Manufacturing Co., Inc.
1867 *Nashville, Tennessee* 1944
PIONEER STOVE BUILDERS

zles has far exceeded the capacity of the eastern plant to produce, and the present arrangement has been entered into in order to provide greater production and better distribution. Delavan Engineering Company, a subsidiary of the Delavan Manufacturing Company, will distribute the line. Production facilities are being set up, and shipments will start from Des Moines within the next few months.

◈

Comm. Standards Adopted for Hi-Temp Wool Insulation

FOLLOWING TWO YEARS of work by the Specifications Committee of the Industrial Mineral Wool Institute in cooperation with the National Bureau of Standards, a thirty page Commercial Standard, CS 117-44 entitled, Mineral Wool: Blankets, Blocks, Insulating Cement and Pipe Insulation for Heated Industrial Equipment was promulgated and published by the Government Printing Office.

Ten revised drafts during the two year period of formulation were considered by industry, government agencies, engineering societies and others resulting in acceptance of the Standard by 325 organizations as their standard of practice.

Being the first and only authoritative high temperature standard promulgated by the Bureau of Standards to serve the best interests of the industrial and commercial consumer, plant management and engineers will find the Standard a practical help with insulation problems.

The Standard is primarily designed to afford consumer protection through both its material and installation specification requirements. Clear, ample explanation and nineteen cross section illustrations make installation of the mineral wool products, separately or in combination, an easy, step by step procedure. By adherence to these application principles, maintenance crews as well as contracting applicators and engineers are able to install the insulation in a manner assuring long and satisfactory service. Also provided are tables for individual products giving thicknesses recommended to take care of operating temperatures by temperature ranges up to 1600°F. Thermal conductivity (K) is specified for each product at various mean temperatures with density requirement, and much other information of value is included.

THE NEW YORK FACTORY BRANCH of General Controls, Glendale, Calif., manufacturers of automatic pressure, temperature, and flow controls, has occupied new quarters in the Architects Building, 101 Park Avenue, New York. Increased demand for their product and a desire to give better service prompted this change. Also in line with the expansion program, the lished by the Government Printing Office. Cleveland Branch has moved 3224 Euclid Avenue, Cleveland, Ohio.

THE SULLIVAN VALVE & ENGINEERING CO., Butte, Montana, has been appointed distributors of H. B. SMITH boilers in the state of Montana and Northern Idaho.

CLEAN BOILER WATER WITHOUT DRAINING OR FLUSHING

by simply pouring RUSTBUSTER Boiler Treatment into the boiler water . . and letting the chemical action break up the rust and scale and foreign matter . . rustproof the boiler . . then return the water to crystal clarity . . and accomplish these results WITHOUT *Draining* nor *Flushing*.

Rusty, lazy, dirty boiler water can waste as much as 30% of the heat, even with the best of equipment.

RUSTBUSTER Boiler Treatment gets *more heat from less fuel* by sensitizing the water to heat and steam quicker . . better acting air valves . . hotter domestic water from an indirect coil . . and faster circulation.

RUSTBUSTER is a sensible and thrifty treatment for every heating boiler that costs about ½ old-fashioned methods.

DEALERS

USE RUSTBUSTER

Easy to sell and use. A real profit-maker and business builder. Ideal for manpower shortage areas. Reasonable prices.

JOBBERS

SELL RUSTBUSTER

Good repeat business — volume sales builder — good discounts.

Counter Displays That Sell.

CANNON
CHEMICAL COMPANY
EVERETT, MASS.
Everett 2031

Todd is "calling on" your prospects

with good news for you!

MODERNIZE your Boiler
• to conserve fuel
• to increase power production
• to cut the cost of a pound of steam
$500
COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION

Here's one of the many ways Todd helps pave the dealer's way to future profits . . . a series of important messages addressed to those now planning for the modernization or construction of heat and power plants in all types of commercial and industrial buildings, schools, hospitals, and other institutions.

These advertisements are "calling on" your prospects, month after month . . . giving the reasons for Todd's leadership in the field of liquid and gaseous combustion equipment.

Since the outbreak of war, Todd dealers have sold and installed many of the Todd oil and gas burners used in war plants throughout the world. Todd and the dealer can look forward to a continuance of this profitable partnership in the combustion equipment market in the years ahead.

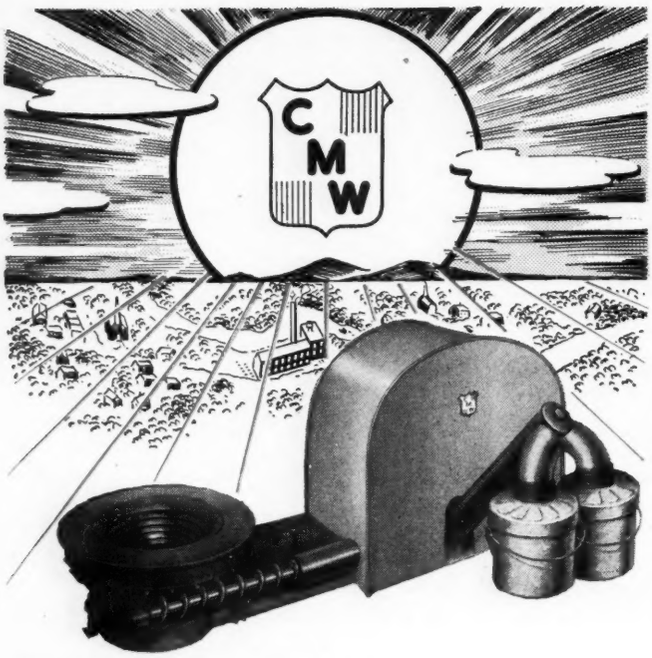
ARMY E NAVY

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
601 West 26th Street, New York 1, N. Y.

NEW YORK, BROOKLYN, ROCHESTER, HOBOKEN, NEWARK, BARBER, N. J., PHILADELPHIA, SO. PORTLAND, ME., BOSTON, SPRINGFIELD, MASS., BALTIMORE, WASHINGTON, CHICAGO, GRAND RAPIDS, TAMPA, GALVESTON, HOUSTON, MOBILE, NEW ORLEANS, LOS ANGELES, SAN FRANCISCO, SEATTLE, TACOMA, MONTREAL. TORONTO. BUENOS AIRES, LONDON

ON THE FIRING LINE OF AMERICA'S WAR PRODUCTION FRONT

fuel oil / oil heat



READY...

when Victory comes

CATSKILL

CATSKILL . . . Remember the name. Watch for the CATSKILL STOKER; THE CMW HOT WATER MAKER; THE CMW UTILITY HEAT MACHINE . . . a trio of profit-packed, easy-selling units of automatic anthracite domestic heating equipment . . . ready for V-Day release. CATSKILL, with a record of distinguished firsts in stoker development, has put 15 years of "know how" into these units . . . and backs them with a sensible, liberal, practical dealer help plan.

CATSKILL is in the heart of the wealthiest, most thickly populated section of the United States . . . the heart of the anthracite coal area . . . where "hard coal" is recognized as the cleanest, safest, most economical and most efficient fuel . . . a ready made market for Catskill products.

WRITE FOR "OPPORTUNITY"

Get this new, free brochure. Learn about the market, the products . . . and Catskill's plan for dealer cooperation!

CMW

CATSKILL METAL WORKS, Inc.
CATSKILL, NEW YORK
ONE OF THE LARGEST PRODUCERS OF ANTHRACITE STOKERS

Help Your Customers to Winter Comfort on Less Fuel

This winter, you'll make many good friends if you show those home owners in your community how to stretch their fuel, either coal or oil, to avoid shortage and cold homes later.

Show those customers of yours the fuel-saving advantages of A-P AUTOMATIC TEMPERATURE CONTROL SETS. They can be added quickly, easily, inexpensively — and they offer ready SALES to you — and profit both on the sale and on the installation.

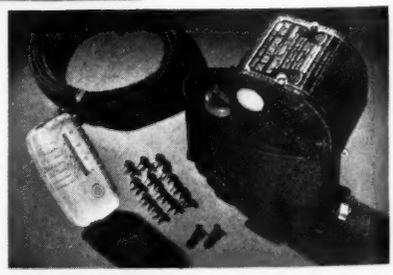
Write NOW for bulletins and prices on these A-P Fuel-Saving Control Sets . . .

FOR USERS OF OIL BURNING SPACE HEATERS

A-P Model 240-ED Thermostatic Temperature Control Set. Can be easily added to any space heater, new or old, using A-P Models 240-DR or UR Manual Controls.

FOR USERS OF OIL BURNING GRAVITY TYPE FURNACES

A-P complete Furnace Control Set. Precision-built, includes sensitive thermostat, constant level oil control, fan switch and inbuilt transformer. Available without constant level control for addition to furnaces not now automatically controlled.



FOR USERS OF COAL-FIRED FURNACES

A-P Thermostatic Heat Regulator Set. Designed to control warm air, steam, or hot water systems. Includes wall thermostat, damper control, transformer, and limit control for each type of furnace.

Tie in on this important FUEL-SAVING program now.

AUTOMATIC PRODUCTS COMPANY

2458 NORTH 32nd STREET, MILWAUKEE 10, WIS.

AP

DEPENDABLE FUEL CONTROLS

New Products

Preheats Domestic Burner Air to Increase Efficiency

OIL HEAT MASTER, a device which is attached to the end of a domestic burner air tube, has been announced to preheat combustion air and oil and effect an increase in combustion efficiency claimed as high at 33%. It is manufactured by the Oil Heat Master Mfg. Co., New York.

Combustion air from the blast tube is lead through two passes in the body of the attachment and heated before it is admitted to a chamber through which the oil spray passes. The fuel spray, carried by a small amount of primary air which flows around the nozzle, is carried forward, mixed with the hot combustion air and vaporized in the front section where combustion takes place. It is claimed that the flame which issues from the attachment is bluish white and combustion is complete.

The Oil Heat Master is attached to the open end of the blast tube and installed in the front wall of the firebox with the opening protruding slightly into the combustion chamber. The back end consists of two concentric tubes, the larger of which fits around the blast tube, and the smaller fits over the nozzle so that the nozzle is in the center. Air passing between the two tubes is lead through the body of the device to be heated prior to combustion.

Paint Resists High Heat

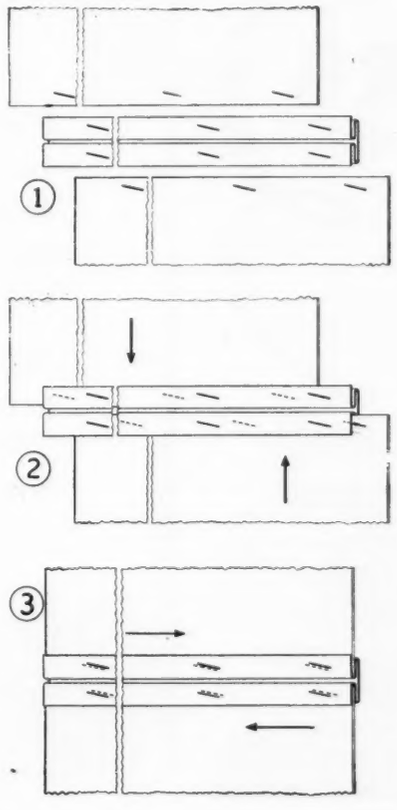
PAINT FOR METAL OR CERAMIC SURFACES that will withstand heat up to 2,500 degrees has been announced in a variety of colors by the Quigley Co., New York. Triple-A High Heat Resisting Paint is applied by brush as received and allowed to air-dry 1½ hours for all ordinary application. Where dampness or weather will be encountered the paint film is heated to make it moisture proof. It can be sprayed on hot surfaces where shut-down is inconvenient, and can be used on continuously hot surfaces without extra heat treating. After the paint is heated it will resist water, oil, gasoline, benzol, heat and weather.

The resistance to heat depends on the surface to which the paint is applied. On light steel it will adhere under rapid heating and cooling up to 1,400°F. On alloy steel or brick it will stand 2,500° or higher. Triple-A is said to be non-inflammable, non-irritating, and does not give off fumes or odors at any time.

Quick Fastener for Sheet Metal Application

SHEETLOCK COMPANY, Chicago, manufacturers of self-fastening connector strips for non-metallic sheets, now is ready with a new Sheetlock strip for connecting sheet metal. It can be taken apart as easily as assembled without injury to the strip or the sheet. Tests indicate this new strip holds as securely as bolts, rivets or screws, and can be used wherever sheets of metal are joined.

This Sheetlock strip is a double channel with indented louvers or notches, spaced uniformly at a 12° angle along the sides of the strip. Protruded louvers are made along the edge of the sheets, spaced and angled the same as the strip. The sheets are then pushed into the channel, and slid parallel to the strip until the louvers engage, forming a wedged lock. To disconnect, simply reverse this procedure.



This strip will come in both flat for straight connections and angle for corner connections.

Mel Gauge Specifications

MEL GAUGE CO., East Haven, Conn., has issued a specification sheet on Model C and Model A1 gauges for 275-gal. fuel-oil storage tanks. The gauges are for use with 1½ in. or 2 in. pipe thread and are adjustable for accuracy. The heads are steel and transparent cellulose acitate with a vertically mounted dial against which the indicator moves. Rotating floats are all metal and corrosion protected.

Four New Insulators In Eagle-Picher Line

THE INSULATION DIVISION of the Eagle-Picher Sales Co., Cincinnati, has announced four new products to their line of insulating materials. Eagle-Picher has named the new products, "Eagle Swetchek," "Eagle Drycote," "Eagle Hadesite," and "Eagle '43' Finishing Cement."

Eagle Swetchek, an insulation for minimizing condensation, for use on cold water lines, water coolers and softeners, storage tanks, filters and condensers, was described as a prepared plastic coating exceptionally resistant to abrasion, and black in color.

Eagle Drycote, companion product to Eagle Swetchek in effectively combatting condensation is a plastic coating, white in color, and packaged in dry form. When mixed with water and applied by trowel or hand application to any clean dry surface, it becomes smooth and glossy white in color and sets into an extremely hard surface. It is highly fireproof.

Eagle Hadesite is a fireproofing insulating cement for high temperature work. Mixed with water Hadesite is troweled to a smooth hard finish of salmon color

and is used primarily for fireproofing structural steel, lining high temperature ducts, firedoors, etc. Hadesite is used to temperatures to 1900° F.

Eagle "43" Finishing Cement is used for finishing interior insulation work where an extremely hard, smooth surface is desired. It can also be painted and withstands temperatures to 800° F.

Controller Protects Pumps

FIGURE 416, a new pump controller for use where liquid is delivered by gravity to a motor-driven pump, has been announced by Bowser, Inc., Ft. Wayne, Ind., to prevent pump operation when there is not sufficient volume to fill the pump. The unit consists of a 20-gauge steel tank of 20-gal. capacity into which the oil flows by gravity. As the oil level rises, lifting a float, a switch is closed permitting the pump motor to start. The motor will operate until the liquid level drops to a dangerous level.

This controller is recommended for applications where tank cars or tank trucks are unloaded by gravity to a power-driven pump for discharge to storage. When the dump is completed, the pump is stopped automatically, preventing the damage that may result from operating the pump dry.

Small Transformer

A SMALL, compact, hermetically sealed Sola Constant Voltage Transformer for through-chassis mounting, has been designed for such applications as heating and refrigeration controls, vacuum tube volt-meters, electronic gauging and inspection equipment and other applications where precisely regulated supply voltage is mandatory. At any reasonable transformation ratio of input to output it will provide a single output voltage constant to within ± 1% of rated requirements regardless of line voltage variations as great as ± 12 to 15%. Capacities up to 15 VA, 60 cycle operation are available and are supplied with a separate capacitor unit for external mounting. Bulletin No. CV-105 gives complete electrical and mechanical specifications is available from Sola Electric Co., Chicago.

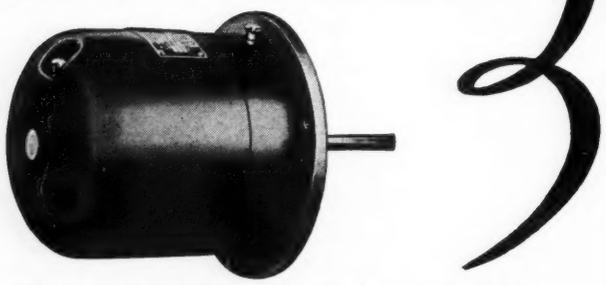
Timer Allows Settings For a Week in Advance

A NEW TIMER on which settings can be made in advance for an entire week has been announced by Paragon Electric Co., Chicago. These switches for timing automatic heating or ventilating, are equipped with 6-in. calendar dials which make one complete revolution every seven days. Dial trippers can be independently set for different daily "on" and "off" schedules, or any day or days operations may be omitted entirely on a pre-set program.

Power Assembly Speeds Delivery

STANDARD EQUIPMENT has been assembled into a complete package for the conversion of old tank trucks into fast and metered delivery units, by J. C. Remlinger Co., Milwaukee. The Remco assembly consists of a Brown-Lipe power take-off, Spicer universal joint and shaft, Yale & Towne pump, Milwaukee line strainer, Philadelphia all-steel, ball-bearing reel, suction line and hose, Electric

OHIO MOTORS



Blend Perfectly with Modern Appliances

Types—Split Phase and Capacitor
Speeds—1140, 1725, 3500 RPM
Power—1/20 to ½ HP, depending on speed
Voltages—Up to 220 A. C.
Frequencies—60, 50 and 25 cycles
Bases—Solid, Resilient or Flange
Mountings — Horizontal, Sidewall, Ceiling or Vertical, with shaft up or down

What is your problem?

THE OHIO ELECTRIC MFG. CO.
5913 MAURICE AVE., CLEVELAND 4, OHIO

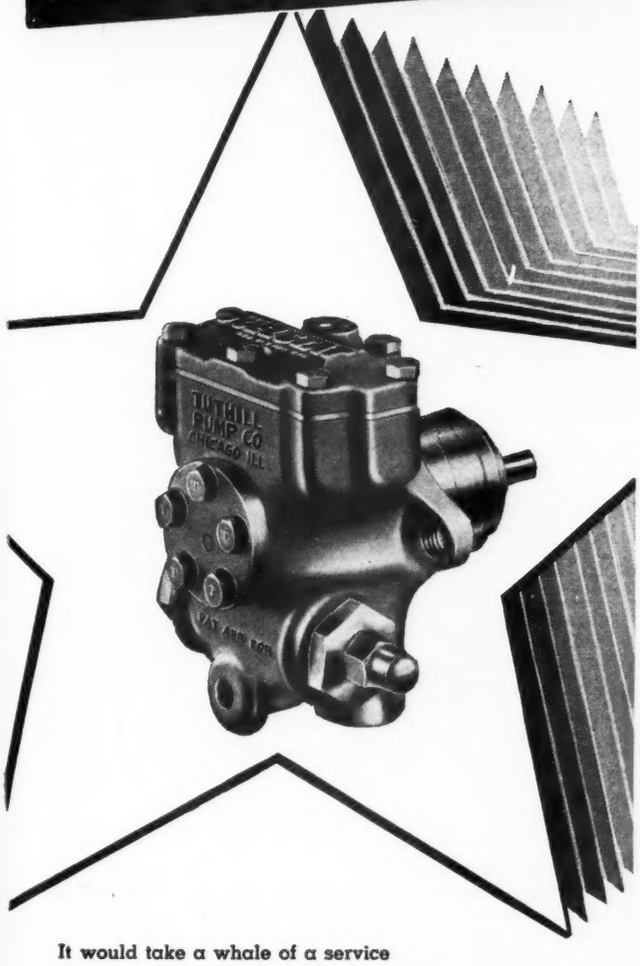
IMPORTANT DECISION

Many oil burner dealers have decided that Toridheet is the heating line that will win them greatest success.

Good, substantial reasons prompt their decision. Would you like to hear what they are?

TORIDHEET DIVISION
Cleveland Steel Products Corp. — Cleveland 2, Ohio
Oil Burners — Air Conditioning Units — Oil Burner Boilers
Coal and Gas Furnaces — Water Heaters

TOO MANY STARS TO SHOW....



It would take a whale of a service flag to show a star for each one of the thousands of Tuthill Pumps and Fuelstats now serving our armed forces from production lines to battle fronts.

With these pumps going where they are needed most, it is understandable that users on the home front must make present equipment serve until victory is won.

Tuthill authorized field service stations and the factory stand ready to repair or recondition your Tuthill pumping equipment to keep it on the job.

TUTHILL PUMPS are serving Army • Navy • Air Force Merchant Marine and Industry

TUTHILL PUMP COMPANY
939 E. 95th St. • Chicago 19, Illinois

Do you want SENSE or Sensation? A lot of sensational talk about oil heating equipment for the post-war period is going the rounds. Here, at QUIET MAY, we are saying little but planning much. That makes sense to us. If it makes sense to you, see us before you sign up for any post-war sensations.

The proven and dependable Dual Utility Oil Heating Unit will be included in the line when we resume production.

May Oil Burner Corporation
Baltimore-3, Md.

discharge hose and Milwaukee nozzle. These parts are coordinated into a conversion unit that can be adapted to any tank truck. Parts are available separately if desired.

Describes Hose Reels

HOSE REELS for various tank truck and bulk plant applications are described in a folder issued by Clifford B. Hannay & Son, Westerlo, N. Y. Reels are provided in a variety of sizes for side cabinet or bucket box installation. Electric drive models are available for either 6 volt or 12 volt systems in the same sizes as the standard reels. The folder also shows a complete parts list.

Blackmer Direct Drive Pump for Low Volume

LABORATORY AND FIELD TESTS have been completed on a new direct connected small capacity rotary pump by Blackmer Pump Co., Grand Rapids, Mich.

The specifications are: Capacity, ½ GPM; Discharge pressure 100 psi; Direct connected by a flexible coupling to an 1800 RPM motor. Overall dimensions: Length 11¾", width 5⅜", height 5", weight 15¾ lbs.

Built in relief valves are optional and the units are available for belt drive, as a pump only, or the rotating elements may be supplied where the pump is installed as an integral part of a machine.

Couplings for Burners

FLEXIBLE COUPLINGS suitable for use on oilfired equipment have been announced by the Flexible Coupling Mfg. Co., Chicago. These couplings have steel bushings pressed into the rubber tube instead of being crimped or bonded to the end, permitting the tube to be as great in overall leangth as the coupling. Because of this construction, greater flexibility is claimed, particularly on short couplings.

Set screws run through the brass ferrule, the rubber tubing and the steel bushing, providing a rubber lock to prevent loosening under vibration. Due to the simplicity of construction, couplings can be cut to any length within a fraction of an inch and delivery of any quantity can be speeded.

Kit Provides Centers For Turning Armatures

TRUCENTER ARMATURE KITS have been put on the market by the F. G. Martin Co., New Haven, Conn., to provide motor shaft centers that will allow exact centering in a lathe when armatures need to be turned. Many types of small motors are provided with shafts in which there are no centers. The kits are packed in a box containing two holders, a lathe dog and a series of bushings that adapt the motor shaft to the holders.

PREFERRED UTILITIES MFG. CO. has published a new pamphlet, "New Approaches to Surface Protection." It is primarily a technical discussion of the Preferred preparations, White Hot and Pyro-Chrome. It may be obtained by writing the company, 1860 Broadway, New York.

MAKE THEM LAST!

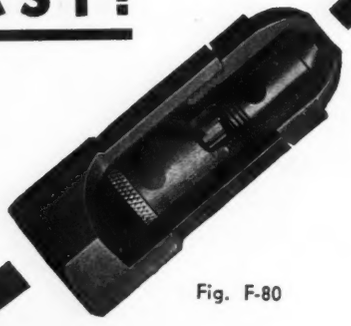


Fig. F-80

Nozzles will probably continue to be scarce this winter so take care of those you have. *Never* clean nozzles with pins, etc., try to remove carbon with a file, or carry service nozzles unprotected—a nick in the orifice means a nozzle for the scrap.

DEALERS: Completely revised Burner Accessory Catalog D containing more detailed nozzle information, and new tables, charts and illustrations is now available. Have you sent for your copy?

MONARCH MFG. WORKS, INC.

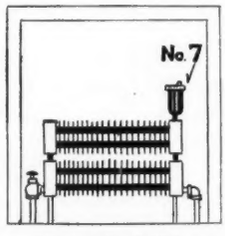
E. WESTMORELAND & SALMON STS., PHILADELPHIA 34, PA.

And Keep It Out With

AUTO-VENT AIR ELIMINATORS

CIRCULATION TROUBLES?

Don't fight air pockets or traps in hot or cold circulating lines! "Get that air out of there" *and keep it out* simply by installing the No. 7 Maid-O'-Mist Automatic Air Vent. This reliable air vent has a self-closing float-controlled valve and is designed especially for circulating pipe lines, convector radiators, unit heaters, cooling manifolds, tanks, diesel engines, or any other application where air pockets or traps retard the free circulation of liquids. Now available in bright brass finish.



Venting Fin Radiator

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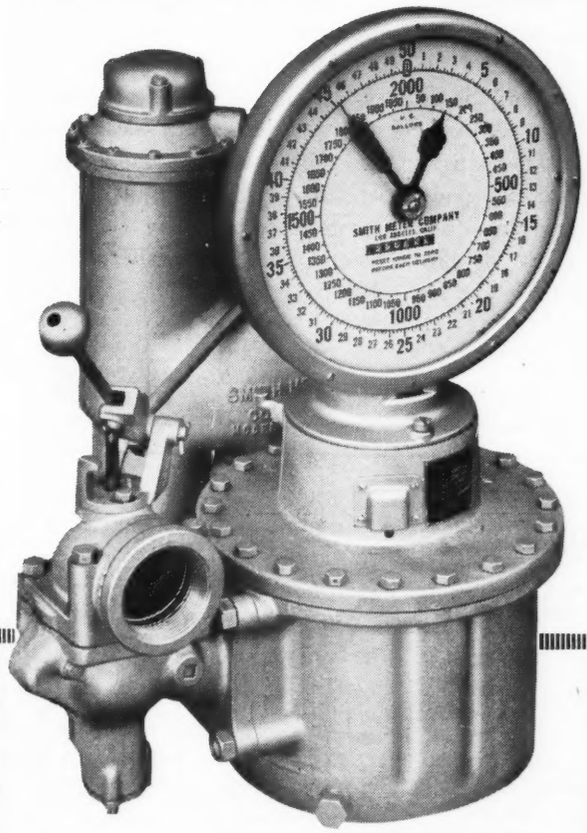

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—easy to install and service. Guaranteed accuracy — within 1/10 of 1% throughout operating range. Available, as are all other Smith Meters, on priority.

SPEED and *accuracy* in measuring petroleum products are practically impossible without petroleum meters—*good* ones.

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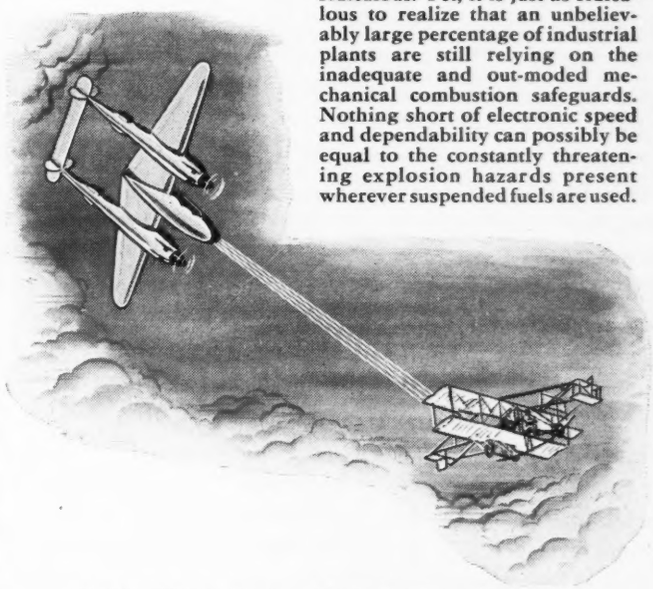

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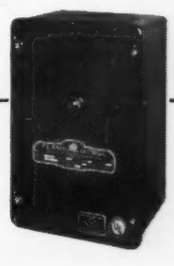


Everyday Snags

Installing Satisfactory Dual Control System

FIRED BY AUTOMATIC HORIZONTAL rotary cup burners which use No. 6 oil, the two boilers shown in the accompanying diagram provide steam for a heating plant equipped with individual room controls of the pneumatic type. Steam pressure is maintained all winter. When any automatic radiator valve opens, the radiator receives steam.

Summoned last spring to adjust the burner controls, a service man found each burner started and stopped by a pressure control on the boiler fired by the burner. Control C was connected to burner #1; control D was connected to burner #2. For providing summer-winter hot water, temperature control E was connected to burner #1; control F was connected to burner #2. The two boilers were connected to an indirect water heater which was in turn connected to a 500-gallon hot water storage tank.

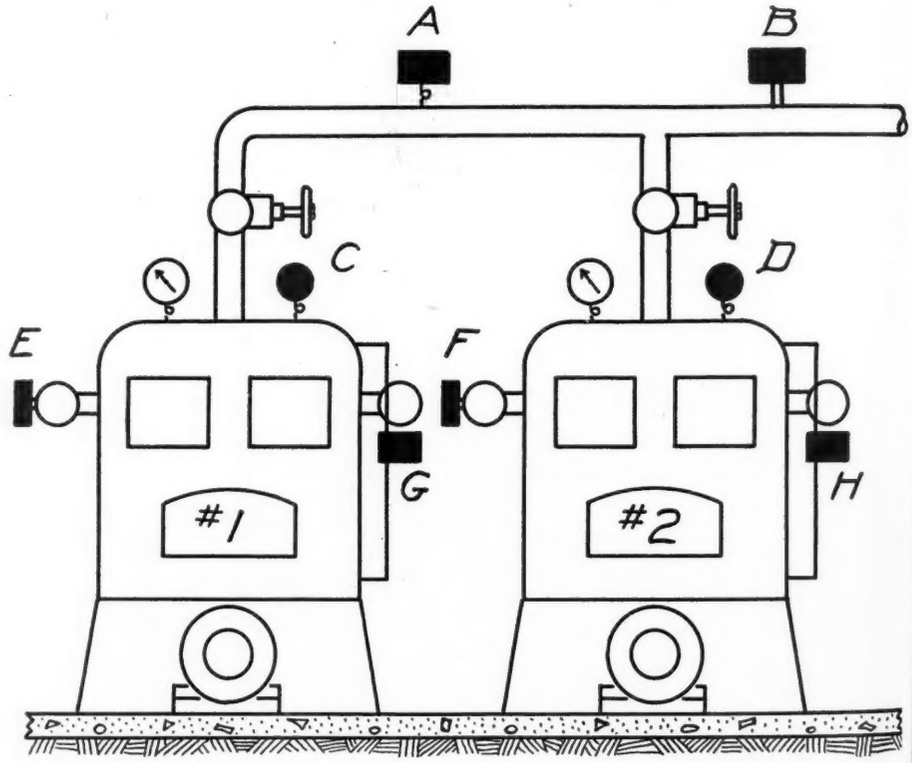
As he made his final tune-up of the pressure controls on the two boilers, the service man remarked to the owner that with this control arrangement it was impossible for the two burners to start and stop together. No matter how carefully pressure controls C and D were adjusted, on a drop in steam pressure one would click in before the other, and on a rise in steam pressure one control would snap open, and stop the burner connected to it, before the other control would snap open.

Although the service man's remark was not intended as "sales bait" to entice the owner into becoming interested in buying a more satisfactory control system, it might well have been, for the owner quickly asked if controls could be installed to make the burners start and stop simultaneously. It developed that the owner had studied the starting and stopping of the burners with the controls adjusted differently, and had come to the conclusion that simultaneous burner operation was very desirable. During the coldest months he had noticed, for example, that after one burner had been stopped by its pressure control, the other would continue running steadily because under heavy load the steam pressure dropped with only one burner running. The first burner to stop would go on and off all day, while the other burner ran continuously. It was impossible to eliminate this by adjusting the pressure controls. As the service man said, no matter how painstakingly these were adjusted, they would not click on and off at precisely the same second.

The service man made a sketch of the heating and oil burner layout, and the installed controls, and with the help of a control specialist developed the wiring diagram on next page. It features simultaneous starting and stopping plus a few additional improvements. First, it provides a much-needed low water cutout for each boiler. Second, it includes a tank temperature control to eliminate waste of fuel oil in summer. With this control, no oil is burned when the temperature halfway up the hot water storage tank exceeds 130°F., whereas with the old arrangement, in summer a heating boiler was kept at 180° day and night whether hot water was needed or not.

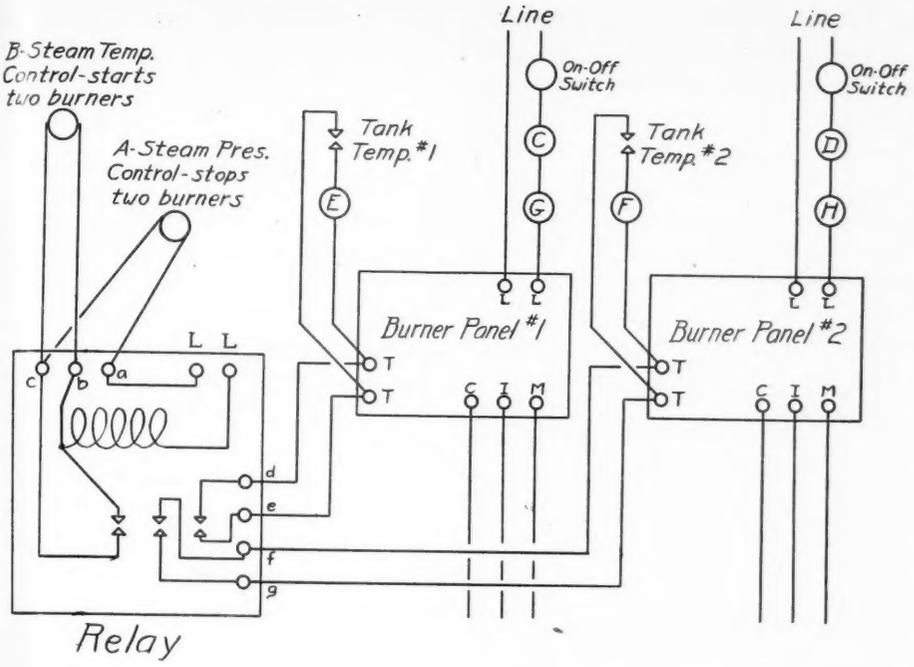
As far as the heating cycle is concerned, the new relay shown in the accompanying diagram is the brains of the new control layout. Relay terminals marked L-L receive 110-volts for operating the relay. The coil shown in the diagram is the solenoid coil of the relay. When this coil receives current, three sets of contacts snap closed. One set, connected to terminals d and e, starts burner #1 because it is connected to the thermostat circuit of burner panel #1. The next set, connected to terminals f and g, starts burner #2. The third set of relay contacts, to the left of the other two, serves a "lock-in" or "hold-in" function.

Notice in both diagrams there is a steam pressure control marked A. This is a new control, installed on the header of the two steam boilers, as one diagram indicates. On the same steam header is a new, immersion type temperature control, labelled B. This is adjusted, for first tests, for its contacts to close when the temperature of the steam header drops to about 210°F.



The idea is for the pressure control A to stop the two burners simultaneously. Following this, control B keeps the burners idle for about five minutes (this "enforced idle period" can be made longer or shorter by adjusting control B), then permits them to start simultaneously. It is necessary to use control B to arrive at simultaneous starting of the two burners because each burner has a stack control which must snap to a "cold-stack" position to permit the burner to start. By the time the circuit of control B closes, the stack controls of both burners have had ample time to chill and be in the proper positions for starting the burners.

To understand how controls A and B work in conjunction with the "hold-in" or "lock-in" control contacts of the re

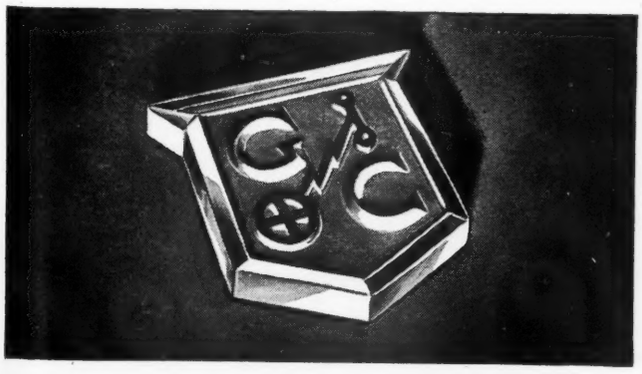


lay, to the end that A stops the two burners and B starts them, study the control circuit wiring diagram. Notice how the two controls, and the "hold-in" or "lock-in" contacts of the relay, are connected to posts a, b, and c. With the relay circuits open because control A has stopped the burners, the relay can not snap in again (even after control A clicks to its "on" position) until steam temperature control B chills sufficiently for its circuit to close.

Of course, within a few minutes after the burners start, the circuit of control B opens. But this does not stop the burners; they continue to run until the circuit of control A opens because the steam pressure has reached the desired maximum limit.

Controls C and D, both set to open at about two pounds higher steam pressure than control A, remain on the boilers for use as ultimate safety controls. Any installation which uses one control for steady starting and stopping of a burner should have a second "ultimate safety" control to stop the burner in event of failure of the first control. Notice how pressure controls C and D fit into the wiring diagram. They are in series with low level water controls G and H. The opening of the circuit of any of these controls, C. D. G. or H. stops only one boiler; for these controls act only in emergencies, and when they turn off one burner in cold weather, it is desirable that the other boiler continue to be fired to keep up the heat.

Notice in the wiring diagram the switches labelled "Tank Temp. #1" and "Tank Temp. #2." Actually, both these switches are mercury tubes mounted side-by-side in the one hot water tank temperature control. When the tank is cool, both these switches are closed; when the



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tank reaches the proper temperature, they snap open simultaneously. E and F are the boiler temperature controls. For summer operation, the main "on-off switch" of either burner is opened. That leaves the other burner in operation for water heating, and it is started and stopped by tank temperature as well as boiler temperature, in the manner which has been described.

Although the service man did not know this at the time he planned the new control layout, the owner had been put to major expense a few years ago because four sections of one boiler had broken. Low water in the boiler, caused by the starting and stopping of one burner while the other ran steadily, had been suspected as the cause of the breakage. Luckily for the service man in his efforts to make the sale of the new control system, the owner of the equipment decided that the new controls would give double protection against repetition of the low water trouble. First, the waterlines of the two boilers would be steadier with the burners starting and stopping together; second, the new layout included low water cutouts.

Consideration of the overall fuel economy aspects of this control problem brings up several questions. To begin, it is possible that operating one boiler continuously and having the other one cut in and out may give greater efficiency, especially in view of the fact that pneumatic controls govern the temperatures of each room, than will result from starting and stopping the burners together. The control specialist who helped the service man make the new control layout is worried about that possibility. But, to help offset his worries, the use of the new layout may pave the way to the installation of additional controls, perhaps of the type which gears the heating to outside weather.

The proper application of such controls would, in effect, lower the setting of control B (the temperature control on the steam header, which starts the burners) as much as possible on any given day without cutting down sufficiently on the steam generated to result in "starving" of the pneumatic thermostats in each room. On a 20° day, for example, the burners may stay idle for, say, 15 minutes after they are turned off by the steam pressure control; on a 40° day, they may stay idle for 30 minutes after each "on" period; and so on.

Two Hot Water Tanks

SEVERAL YEARS AGO when the heating boiler in a commercial building was being converted from coal to oil, the burner dealer doing the work declared it practically impossible to connect together the two hot water tanks that served different parts of the building, and heat both by an indirect water heater kept hot by the heating boiler. To "balance" two tanks of the same diameter and capacity is difficult enough, he pointed out, and any attempts to hook together these tanks of different dimensions would result in one becoming cold before the other when the water heating load was heavy. The upshot was that tank #2 (see the diagram), which was horizontal and of 200 gallons capacity to provide hot water for a restaurant and two stores, was connected to the oil-fired heating boiler, while tank #1 remained heated by a coal-fired pot stove water heater. At that time, tank #1 was of 60 gallons capacity; mounted

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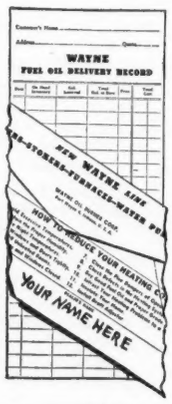

As illustrated—especially designed as a container for fuel oil ration coupons. Front has place for customer's name and ruled form for keeping a complete record of fuel oil purchases. Reverse side lists 12 points on how to save fuel and has place for dealer imprint.

A gift your customers will appreciate—and it's FREE—to help you build post-war business and to get profitable service and accessory sales now. ORDER TODAY. State number desired using your business letterhead.

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They're FREE to all Oil Burner and Fuel Oil Dealers. Order your supply of these manuals now. State number needed using your business letterhead.

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Cooperate with our government's National Fuel Efficiency Program and build your reputation for expert, fuel-saving service . . . by using these practical instruments to make efficiency tests of heating plants.

The easy-to-use FYRITE quickly indicates CO^2 in the flue gas, thus showing whether the fuel receives the proper amount of air. The Stack Thermometer test shows how well the furnace absorbs the heat of fuel burned. The unique FIRE Efficiency FINDER correlates CO^2 and stack temperature readings to show at a glance preventable chimney losses. The handy dry-type DRAFTRITE gauge is indispensable for properly adjusting the draft.

For prices, and complete particulars about the Fyrite Combustion Set, write for Folder 4401.

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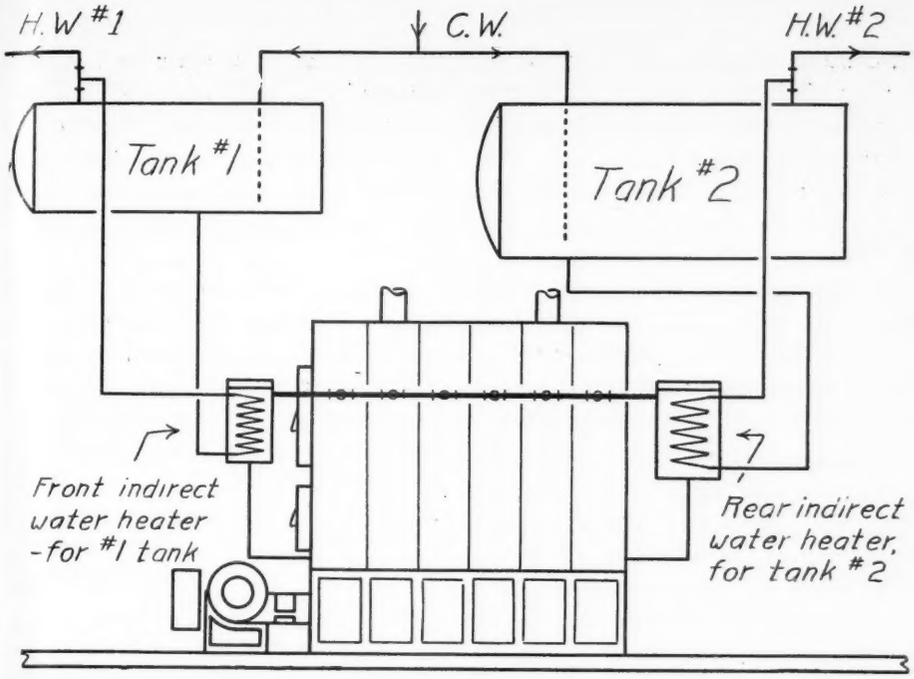

vertically; it provided hot water for three small apartments occupied by business people.

Recently there was trouble with the water heating arrangements. As equipment had to be replaced, the owner again brought up the matter of how inconvenient and unsatisfactory it was to have one tank heated by a coal fire. The results of his discussing this with a heating engineer are shown in the accompanying diagram. The original 60-gallon vertical tank was discarded because of leaks, and in its place was installed a 70-gallon tank. This was mounted as high as possible and horizontally as the accompanying diagram shows. At the front end of the manifold on the cast-iron steam heating boiler, a new indirect water heater was installed, of the proper size to heat Tank #1. Up to that time, this manifold, which had been installed with the oil burner, was connected only to a rear-mounted indirect water heater connected to tank #2.

The tanks are not cross-connected in the usual sense. Each receives cold water from the line labelled C.W. The hot water output line from the 70-gallon tank, labelled H.W. #1, feeds the hot water fixtures in the three small apartments. The line labelled H.W. #2 provides hot water from tank #2, and runs to the restaurant and two stores. The owner of the building finds advantages in the use of two hot water tanks.

If the occupants of the three apartments use too much hot water, he points out, their hot water tank (tank #1) simply goes cold. They learn from this not to draw excessive amounts of hot water. Their tank going cold does not affect the larger tank. Also, considerably hotter water is needed for the restaurant than for the apartments, because in the restaurant a dish washing machine is used.

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Fig. 246

Right now, "EDCO" production is bigger than it ever was in peacetime. Due to the ever increasing demand for "EDCO" Pumps, Pressure Regulating Valves, Pipe Line Strainers and Spray Nozzles by our Armed Forces, there is nowhere near enough left to meet the civilian demands — but they will be worth waiting for.

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The indirect water heaters are sized so that tank #2 becomes much hotter than tank #1. Valves in the circulating lines to the indirect water heaters permit adjustment of the temperatures of the two tanks. The accompanying schematic diagram does not show the safety valves on the tanks, the valves for regulating the tank temperatures, or the valves that permit cleaning out the coils of the water heaters.

◈

Oilheating Trends

(*Continued from page* 11)

men entering the field postwar." . . . "After three years of restraint, people are going to buy in quantity the things that provide more comfortable living."

Typical of Middle Atlantic section comments are: "Burner sales will meet stiff competition from gas, but with more money in circulation our sales are bound to go up. Our industry has not done much to offset gas competition.". . . . "We see a large swing to coordinated units and also increased sales of gadgets to save oil, now that the public has been educated on saving." . . . "I believe gas heating will increase more than any other form unless it is countracted now with vigorous oilheating publicity." . . . "Because of P.A.W. gas heating is taking the fore; we think something should be done by OHI." . . . "Should be better for at least five years, but gas competition will have to be watched." . . . "For at least two, and probably five, years after restrictions are removed, burner business will be much better than any prewar period."

Midwestern comments: "My most concern is what grades of oil we will have and whether this will be determined by the burner manufacturers or the refiners or will they drag along until forced to decision by the building boom" . . . "People in our city are fed up with stokers" . . . "The few that converted from oil to coal will reconvert without exception as soon as they can" . . . "The use of oil in our market has been seriously hurt in favor of natural gas — no restraint on gas has given it an edge that will take years to overcome" . . . "The gas company has a campaign to get all the new housing" . . . "We see a rush of business for several years" . . . "Oil and gas will come into their own; coal is through" . . . "Oil burners will sell well, but gas will run us a stiff race, especially in new homes" . . . "Unlimited sales possibilities if the oilheating industry does not let gas get the jump on us in promotion."

From the Pacific Northwest, these are typical: "We look for considerable competition from other burner companies, but the older firms will hold their own" . . . "We see a lot of good sound business for at least five years after peace is declared."

◈

ASH&VE Research Outlines

A NEW RESEARCH BOOKLET by the American Society of Heating & Ventilating Engineers contains details of 28 projects, the first group in the Society's expanded research program. The booklet is being used in an active campaign for support of the new program under the direction of Samuel R. Lewis, Chicago, chairman of the Research Finance Committee. To obtain a copy of the booklet, address ASH &VE Research Laboratory, 10700 Euclid Ave., Cleveland 6, Ohio.

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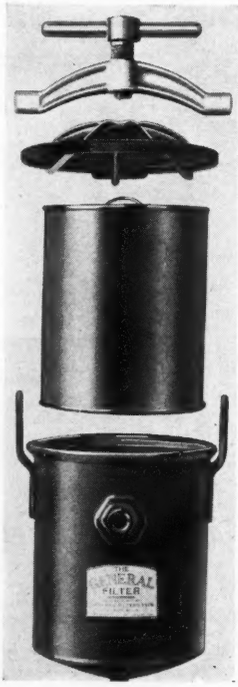

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Oilheating Furnaces Thaw Frozen Ore Cars

FORESHADOWING A PROCESS likely to be widely adopted by steel makers, an ore car thawing plant constructed by Rust Furnace Company, Pittsburgh, Pa., for Carnegie Illinois Steel Corporation, a U. S. Steel subsidiary, successfully completed its test period during the latter part of the past winter.

Purpose of the plant, according to Rust engineers, is to overcome the winter-time condition in which ore from the Lakes becomes soaked with moisture and freezes in the cars so that it will not run out when dumped.

This condition has been met by crude and inefficient methods in the past, which have included holding gas jets against the cars, building wood fires under them, and placing them in sheds under steam for hours—all wasteful of time and labor, and incidentally not contributing to the life of the cars.

Accordingly, an automatically operated plant for the specific purpose of surface thawing ore cars, so as to permit the ore to fall free of the car when unloaded by a dumper, was planned by Carnegie Illinois.

Erected and put in operation in the latter part of the winter, this plant consists of a building with a capacity of two 90-ton ore cars on a track which runs through it. An additional track is provided for an electrically operated pusher locomotive. Housed on a second floor are combustion units for producing hot gas for recirculation and application against the cars.

The arrangement includes thaw chamber, where the cars stand; two double chamber furnaces with rated capacity of 10,000,000 Btu per hour each; two fuel-oil-fired burners, combustion air fan, fuel supply line, steam supply line for fuel atomizing, and motor-driven air recirculating fan, together with the necessary ducts, passages and controls.

An adjustable cycle timer regulates the thawing cycle in two periods gauged by the operator according to the hardness of freeze. The periods are approximately: (1) ten minutes flash heating in excess of 500°F., (2) cutback to between 200°F. and 250°F. for five to 10 minutes of base heating or soaking. At the end of this cycle, the operator opens the doors, this electrically-controlled action causing the fuel shut-off valve to close and stop the air recirculating fan. A pilot flame is left burning to initiate the next combustion cycle.

◈

Max W. Ball, well-known oil geologist, has been appointed special assistant to *Ralph Davies,* Deputy Administrator of P.A.W. *Mr. Ball* is well-qualified for his new position as his background has been varied and wide.

B. I. Graves, vice-president of the Tidewater Associated Oil Co., has been appointed chairman of the Petroleum Industry East Coast Supply and Transportation Committee. His past experience on Government Committees makes him well-qualified for his new position.

Carleton J. Everett has been appointed director of refining in District I, succeeding *William Naden* who resigned to return to private industry. *Edward A. Markey* has become refining director for District IV. Before Mr. Markey's appointment there was no refining director for District IV.

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— for oil burners . . . oil-designed furnaces and boilers *that assure you of:*

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HEIL ANSWERS UNCLE SAM'S CALL . . . and helps the Arsenal of Democracy supply materials for Victory!

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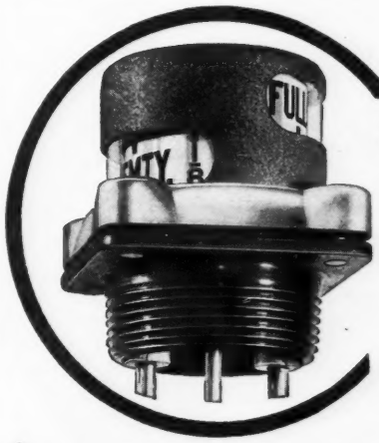

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ROCHESTER "Universal" Gauges are built especially to meet the requirements of basement type oil storage tanks. Double dial —one visible to the delivery man outside the cellar, and one for the owner inside—is a convenient and much appreciated feature. Widely spaced, generous size graduations and figures are made possible by the extreme length of the dial which rotates through a 300° arc. There's no chance of leakage either.

The same magnetic principle used in Rochester Gauges to bring safety in gauging hazardous liquids under pressure is employed in these "Universal" Gauges. That's why they're listed as Standard by Underwriters Laboratories. Rochester "Universal" Gauges are easy to install in any location on the tank and without the necessity of emptying the tank. Obtainable on AA-3 priority from your jobber.

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Our Job Is Sales

(*Continued from page 41*)

retail personnel. It seems to be their opinion that as far as the problem of installation is involved, the assembling of so many parts and pieces on the job has been one of the causes of present-day service and because of this assembling problem many good merchandising men have steered clear of the business. In relation to the second point, that of securing and training sales people, they were very much in agreement that oilheating salesmen have a great deal more to learn than specialty sales people in almost any other field. As the president of one manufacturing firm told me, "I do not know whether it is because the salesmen have to learn so much or whether it is because we have to tell them so much that obstructs streamlined merchandising, but it certainly does take a long time to train a good oilburner salesman sufficiently to meet present industry demands."

In examining these two major industry problems, it is readily evident that the distributor and the dealer will have to look to the manufacturers to correct problem No. 1, for packaged coordinated unit equipment with improved and simplified controls are the obvious answers. It may also be said now that there is increasing evidence that the manufacturers are already at work on this problem as reports coming from highly reliable sources indicate.

The second major problem, that of building and expanding sales organization, is definitely the distributor's and dealer's baby, and on their ability to do this sales personnel job rests to a great extent the visioned future of oil heat.

Salesmen Will Be Needed

The size of the dealers' task is building postwar sales organization is one of real proportions and is recognizable when we realize that the prewar industry took twenty-five years to build up to approximately 14,000 retail salesmen, and that postwar we shall require some 20,000 to 25,000 men if market potentials are to be realized. If we could expect the majority of the prewar salesmen to return to the industry, our job would still be tremendous just to recruit and train the new salesmen needed, but recent studies made among service men and war plant employees indicate that nearly 50 per cent of all our workmen will seek new kinds of employment after the war. This means that at least 50 per cent of our twenty-five-year recruiting and training job will have to be done over again, plus the new job, and all this must be done fast if we are to get our share of the consumer's dollar in the years immediately ahead.

What the Dealer Can Do Now

The work of recruiting and training retail salesmen is almost a science in itself, and for the most part the experts in this field are to be found mostly with the better manufacturers, although there are some retail sales managers who do a highly efficient job in this respect. Whether you are a big metropolitan dealer or a small-town operator, you should start at once to determine just what your job will be in relation to building your sales force and get your plans laid.

The Metropolitan Dealer

If you are a dealer in a metropolitan market with a large potential and you de-

• Capacity: 30 gallons per hour
• Silent, Leak-proof
• Self-Priming
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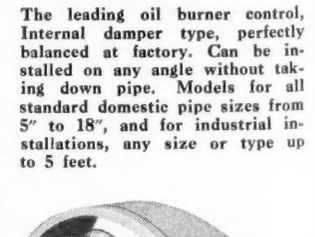

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(Non-Lubricated)

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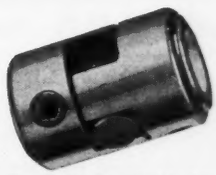

L-R Type "UX" Double-flex, and "IA" Uniflex. Pat. & Pats. Pend.

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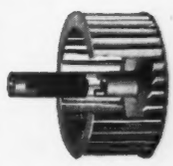

Blower wheel supplied by mfrs., with L-R jaws integral with hub.

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5012 W. LAKE ST. CHICAGO 44, ILL.

sire to do a job commensurate with the size of your market, you really have a task cut out for you, for retail sales forces take large numbers of men in the metropolitan markets. For example, dealer sales organizations in the larger cities of the Eastern Seaboard (exclusive of New York) will require from twenty-five to a hundred men each, depending on size, to do reasonable market coverage. The following are suggested steps which you should take now:

(1) Locate and get under option a retail sales manager with a proven background in retail specialty selling. He need not be experienced in this industry, but his background should reveal success in the recruiting, training, and managing of substantial numbers of retail personnel. This is no job for an amateur.

(2) Consult your manufacturer to make sure that he is planning to have available to assist your sales manager a recruiting and training specialist, as well as a program, for this all important task for you and your sales manager will need all the help you can get.

(3) Locate and get under option your new construction man, the man who will sell your builders. Preliminary to interviewing, it would be wise to consult with your local Builders' Association or Real Estate Board, as well as prominent builders. These people will not only be glad to offer their advice as to the type of man needed, but may help you locate him.

(4) Begin your market study now to determine your potential and the amount of manpower you will require to get it. The 1940 Federal Census Records and the Marketing Department of your local newspaper are your two best quick sources at this time.

(5) Write to any men in the Service now whom you think you would like to employ after the war for you will do well to have early contact with these men after their release and before they are exposed to competitive firms.

The Small-Town Dealer

If you are a dealer in a small town, your potential probably will not warrant a trained retail sales manager. You may have to be your own sales manager. This will be the rule at least where not more than three salesmen are employed, and you undoubtedly will not have occasion to seek a builder man, but the following things you should do as soon as possible:

(1) Check with your manufacturer to determine what plans and programs he will have to assist you with your recruiting and training job.

(2) Make a study of your market, securing information from the same sources recommended for the metropolitan dealer.

(3) Start now to write down every possible service man's name that you can recall to mind who may be available for sales work after the war. Catalogue these names and check their background and continue to do this until you have in your little black book a substantial list of men which you may at least approach when the time comes.

(4) Write to those men in the Service that you feel you would be interested in employing later on and ask them to contact you upon their return. This is much more important for the small town dealer than for the metropolitan dealer where

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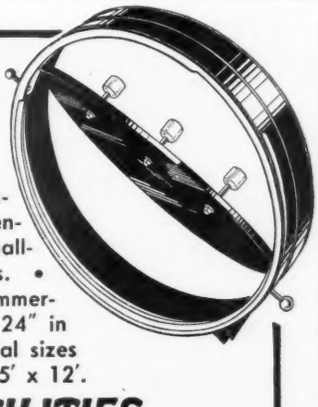

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the same Expert Workmen
as before the war.
BLOOMFIELD, NEW JERSEY

there will be large reservoirs of men on which to draw.

A Problem for Everybody

There is another problem that you must be thinking about if you are a small-town dealer or a metropolitan dealer. That is the subject of salesmen's compensation and here is why. It can almost be said that the future of our free enterprise system depends upon how well we do our postwar selling job nationally, for increasing consumption is our greatest economic need, and it is a problem that can be met only with orders. Nevertheless, the country is about to face this national demand for orders not only with a broken-down sales force, but with a method of compensation both impractical and obsolete. Furthermore, the wage scale of practically all industries engaged in specialty selling has proven to be entirely inadequate because it is based on a theory that only star salesmen are worth while.

Yet every merchandising man in the country knows that the ordinary class of salesmen of America sell 80 per cent of the Nation's goods. We say this policy has been inadequate because it has caused the great rank and file of retail salesmen to move frequently from job to job at great expense to our distribution system, the salesmen apparently operating on the plan that if you must live a life of peonage, they are at least entitled to variety.

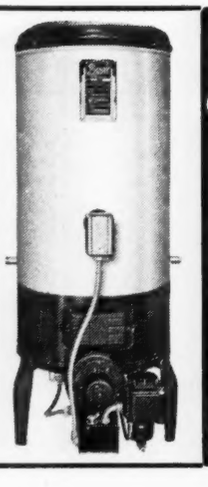
The subject of compensation for retail specialty salesmen is beginning to get serious attention in many industries, and as a dealer in oil heat who will be competing with these other industries for retail personnel, it would seem that this subject should be placed high on your list of problems for early solving.

As we look to the future of the oilheating industry, it is not difficult to be optimistic for manufacturers are promising steady technical advancement, the oil industry promises an adequate supply of oil, the market is the most promising that we have ever seen. All in all, we can truthfully say that the sky is the limit; the great day is coming and that a great job will be done. The only perplexing question in the picture is will the job be done by the same people?

F. W. Dodge Corp. Sees 350,000 Homes First Year

THE CONSTRUCTION INDUSTRY will have the capacity to produce about 350,000 homes in the first twelve months after the defeat of Germany in the opinion of F. W. Dodge Corp., leading authority in the building field. This is somewhat more optimistic than FUELOIL & OIL HEAT'S prediction in its last issue. These contemplated no appreciable home completions in 1945 and 410,000 in 1946.

Dodge estimates the availability of construction manpower after Germany surrenders as 1,120,000 mechanics plus 440,000 helpers and experienced laborers, many of whom are now in war industries. Most scarce among materials will be lumber and plumbing fixtures, for while production can be started for civilian needs almost immediately on these items several months will be required for building up inventories. On heating equipment Dodge expects that it will be six months after V-E day before a buyer can be offered his choice on type of installation.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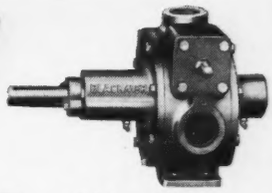
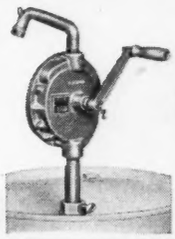
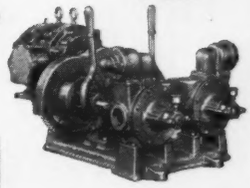


TRUCK PUMPS | POWER PUMPS | HAND PUMPS





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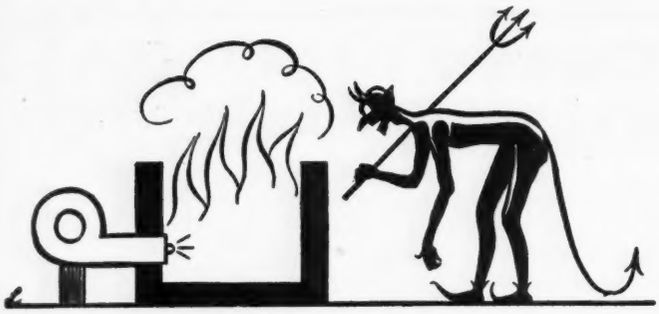

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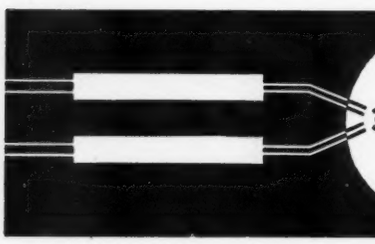

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